

SITE INSPECTION REPORT FOR
WIDING TRANSPORTATION, INC.
KENT, WASHINGTON

TDD F10-8706-08
PAN FWA0523SCR

Report Prepared by: Ecology and Environment, Inc.
Date: July 1988

Submitted to: J.E. Osborn, Regional Project Officer
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U.S. Environmental Protection Agency
Region X
Seattle, Washington



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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
ABSTRACT	
1.0 INTRODUCTION	1
2.0 OWNER/OPERATOR	1
3.0 LOCATION	1
4.0 SITE DESCRIPTION AND SURROUNDING AREA	1
5.0 TOPOGRAPHY AND DRAINAGE	4
6.0 GEOLOGY/HYDROGEOLOGY	5
6.1 Regional Geology	5
6.2 Site (Local) Geology	7
6.3 Regional Hydrogeology	7
6.4 Site Hydrogeology	7
7.0 CLIMATE	8
8.0 GROUND WATER AND SURFACE WATER USE	8
9.0 OVERVIEW OF SITE OPERATIONS	9
10.0 CHARACTERIZATION OF WASTE STREAM	13
11.0 SITE INSPECTION BY E&E	15
12.0 SAMPLING PROGRAM	17
12.1 Previous Sampling	17
12.2 E&E Sampling Program	17
13.0 DRILLING PROGRAM	21
14.0 SAMPLING RESULTS AND DISCUSSION	23
14.1 Ground Water Sampling Results	23
14.1.1 Inorganic Elements	23
14.1.2 Organic Compounds	23
14.2 Soil Sampling Results	26
14.2.1 Inorganic Elements	26
14.2.2 Organic Compounds	26

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Page</u>
15.0 SUMMARY AND CONCLUSIONS	31
REFERENCES	
APPENDIX A - Site Inspection Report Form (EPA Form 2070-13)	
APPENDIX B - Well Logs for MW-1, MW-28 and Local Supply Wells	
APPENDIX C - Photographic Documentation	
APPENDIX D - Previous Analytical Results for Widing Transportation, Inc.	
APPENDIX E - Previous Analytical Results: City of Seattle Midway Landfill Study	
APPENDIX F - EPA Target Compound List	
APPENDIX G - Quality Assurance Memoranda and Analytical Results	

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Products Transported by Widing Transportation, Inc. Circa 1978	14
2	Products Transported by Widing Transportation, Inc. Circa 1985, Over a Four Month Period	15
3	Products Claimed by Widing to Represent Substances Rinsed at Midway Truck Terminal (undated)	16
4	Summary of Samples from E&E Inspection, April 11, 1988, Widing Transportation, Inc., Midway Terminal	19
5	Field Measurements for Ground Water Samples, Widing Transportation, Inc., April 11, 1988	20
6	Borehole Depths and Sampling Intervals, Widing Transportation, Inc., Midway Terminal	22
7	Inorganic Results for Detected Elements in Ground Water, Widing Transportation, Inc., Midway Terminal	24
8	Organic Results for Detected VOCs, Semivolatile Compounds, and Pesticides in Ground Water, Widing Transportation, Inc., Midway Terminal	25
9	Inorganic Results for Detected Elements in Soils, Widing Transportation, Inc., Midway Terminal	27-28
10	Organic Results for Detected VOCs, Semivolatile Compounds, and Pesticides in Soils, Widing Transportation, Inc., Midway Terminal	29-30

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1	Location Map, Widing Transportation, Inc.	2
2	Site Map Circa 1988, Widing Transportation, Inc.	3
3	Surface Water Drainage Patterns Near Widing Transportation, Inc.	6
4	Site Map Circa 1984, Widing Transportation, Inc.	10
5	Sample Location Map, Widing Transportation, Inc.	18

SITE INSPECTION REPORT
WIDING TRANSPORTATION, INC.
KENT, WASHINGTON
TDD F10-8706-08
PAN FWA0523SCR

Site Name/Address

Widing Transportation, Inc.
24300 Pacific Highway South
Kent, Washington 98031

Investigation Participants

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Dates of Investigations

July 13, 1987 1000-1230 hours

Dates of Sampling

April 11, 1988 Ground water samples and
 composite soil samples

May 3-4, 1988 Soil boring samples

DISCLAIMER

This report has been prepared by Ecology and Environment, Inc. under EPA Contract 68-01-7347 and reviewed and approved for public release by the U.S. Environmental Protection Agency (EPA). Mention of commercial products does not constitute endorsement by the U.S. Government. Editing and technical content of this report are the responsibility of Ecology and Environment, Inc., Seattle, Washington, and do not necessarily reflect the views or policies of the EPA.

ABSTRACT

Under Environmental Protection Agency (EPA) Technical Directive Document (TDD) F10-8706-08, a file review and site inspection was conducted on Widing Transportation, Inc., Kent (Midway), Washington to evaluate the facility's status within the Agency's Uncontrolled Hazardous Waste Site Program. As a result of this inspection, two ground water samples, five composite soil boring samples, six surface soil grab samples, and a background surface soil grab sample were collected to determine if contaminants that resulted from tank truck rinse-out activities remained on site or had migrated off site. The samples were analyzed for Target Compound List (TCL) inorganics, volatile organic compounds, semi-volatile organic compounds, pesticides, PCBs, and cyanide. Elevated levels of lead and copper were found in soil from the south drainage ditch on site. Acetone was detected in two soil boring samples at elevated concentrations (20 times higher than background). No other inorganic elements or organic compounds were detected in significant quantities in the remaining soil or water samples.

1.0 INTRODUCTION

Widing Transportation, Inc. (WTI) has been identified by the Region X Environmental Protection Agency (EPA) from preliminary assessment screening as requiring additional information to accurately profile past closure and excavation of tank-truck rinsate ponds and sludge waste. Information was also required to assess other disposal practices, including alleged off-site dumping and on-site burial of wastes. Ecology and Environment, Inc. (E&E), under Technical Directive Document (TDD) No. F10-8706-08, conducted a site inspection and sampling program at WTI between July 13, 1987 and May 4, 1988, in order to evaluate the site's status within the Agency's Uncontrolled Hazardous Waste Program. This report summarizes the results of E&E's site inspection. Information collected during the inspection also appears on EPA Form 2070-13 (Appendix A). A site inspection functions as a screening tool for EPA to use in assessing actual or potential environmental and public health risks as a basis for designing future studies.

2.0 OWNER/OPERATOR

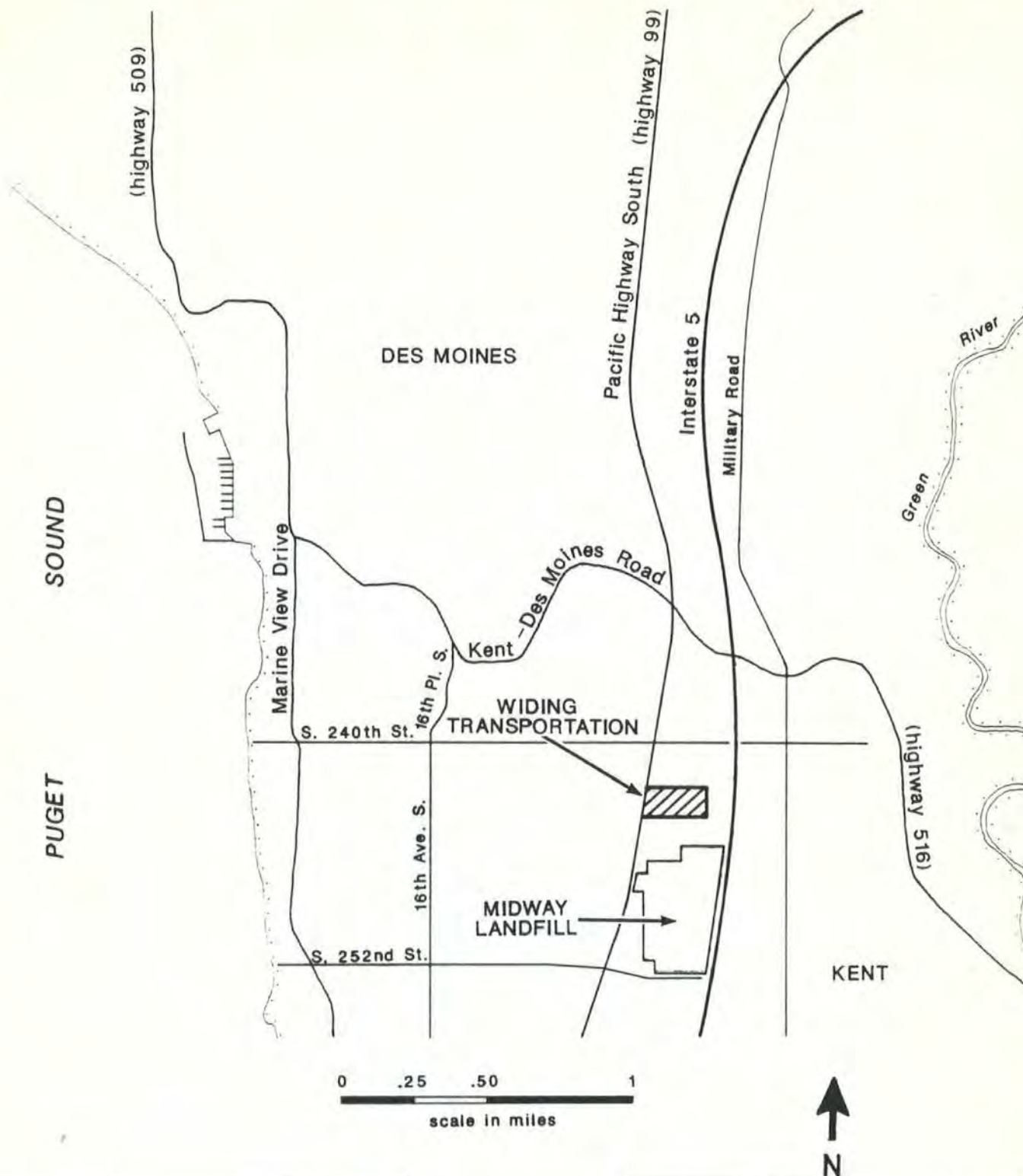
Widing Transportation, Inc. is a former trucking company which was based in Portland, Oregon, from 1958 to 1986 (1). Just prior to the death of owner Glenn Widing in 1986, the business was sold to Arrow Transportation and all assets of Widing Transportation, Inc. were turned over to the Widing shareholders (2). The shareholders are currently represented by Rodman Widing, Sr., brother of Glenn Widing. The site property is owned by the shareholders and is leased to several trucking and heavy equipment companies which currently operate on site. WTI formerly used the property for tank truck maintenance and rinse-out.

3.0 LOCATION

The site is located at 24300 Pacific Highway South, Kent, Washington (Township 22N, Range 4E, Section 21), in the community known as Midway (Figure 1). Latitude and longitude are equivalent to 47°23'06.0" and 122°13'42.0", respectively. These coordinates are based on the approximate geographic area encompassed by the site (see Figure 1).

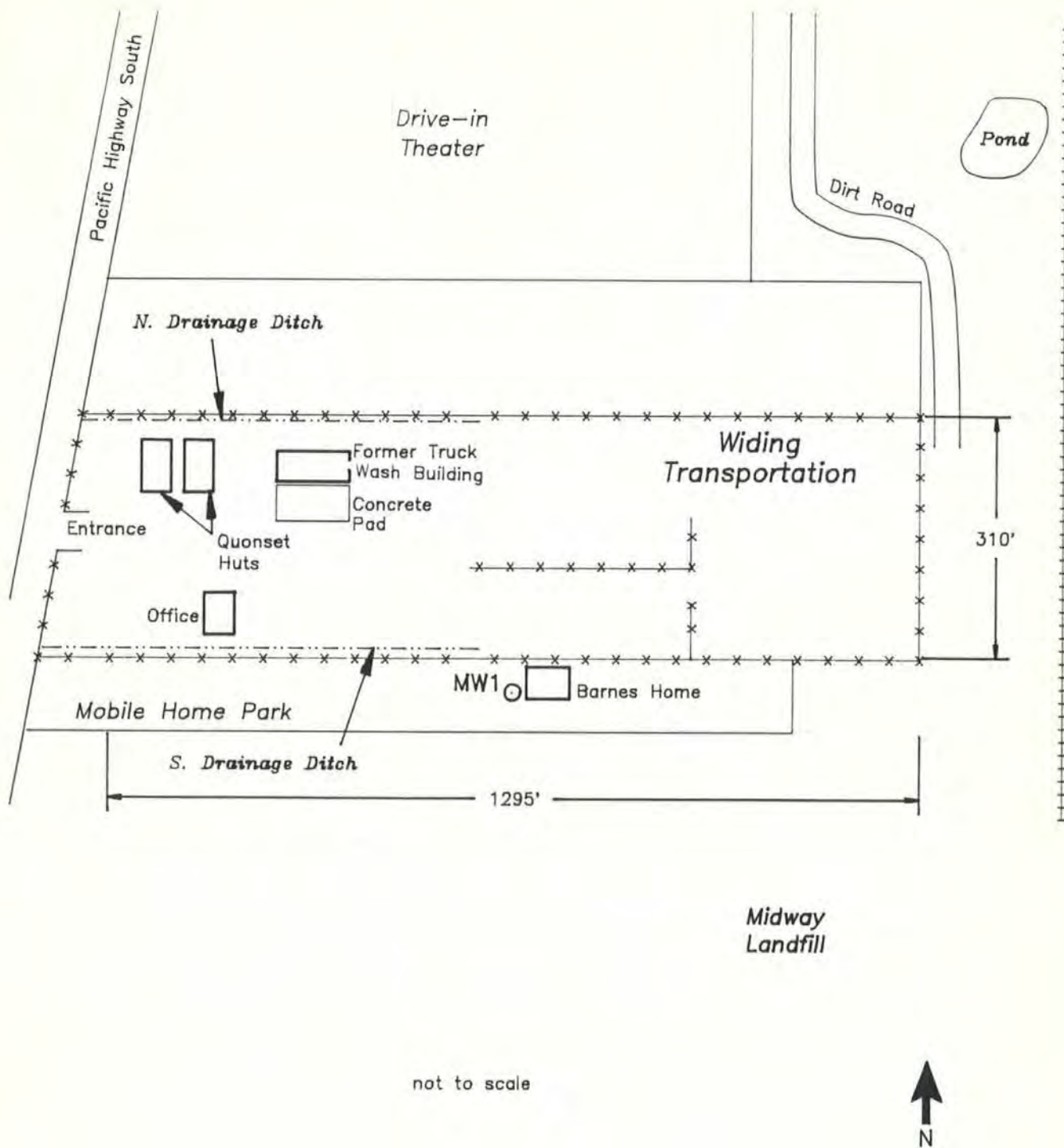
4.0 SITE DESCRIPTION AND SURROUNDING AREA

The site encompasses a 9.3-acre rectangular parcel of land, measuring approximately 1,295 feet on the northern and southern boundaries and 310 feet along the eastern and western borders (Figure 2) (4). The site entrance is situated on the western side, adjacent to Pacific Highway South (Highway 99). A chain link fence surrounds the site, on all but the western side, where a tall wooden fence has been constructed. Additionally, a wooden fence has been installed inside the chain link fence along a section of the southern site boundary which borders a residential area. A chain-link fence with a locked gate separates the eastern one-quarter of the property from the rest of the site. A permanent office building and a mobile home office exist on the southwestern part



ecology & environment, inc.	
Job: F10-8706-08	Waste Site: WA 0523
Drawn by: B.T.	Date: July 18, 1988

FIGURE 1
LOCATION MAP
WIDING TRANSPORTATION, INC.
Kent, WA



LEGEND

- x-x-x- Fence
- MW1 Monitoring well

ecology & environment, inc.	
Job: F10-8706-08	Waste Site: WA 0523
Drawn by: D. P.	Date: Aug. 1, 1988

FIGURE 2
SITE MAP CIRCA 1988
WIDING TRANSPORTATION, INC.
Kent, WA

of the site, near the entrance. Two quonset hut buildings exist at the northwestern end of the property and were the only on-site buildings in existence when Widing obtained the property in 1967 (5). The former truck wash building and an uncovered concrete pad joining it on the south are situated east of the quonset huts. At the time of sampling, several large trucks and trailers were parked on the concrete pad. The truck wash building is currently used for storage of two unoccupied mobile homes. East of the truck wash building, a wooden and chain link fence marks the approximate location of the southern boundary of the three former rinsate ponds (2). This fence intersects another chain link fence which separates the eastern end of the site from the remainder of the site (Figure 2).

A fleet of large trucks, several forklifts, cranes, and other pieces of heavy equipment were present on site during the FIT investigation. In addition to the heavy equipment, metal I-beams, culvert pipes, augers, miscellaneous scrap metal, and surplus items were also present on site. An open-air painting and machine shop situated under a covered patio was in operation by the company which leases the eastern portion of the site. Two sheds were located near this shop, at the southeastern corner of the property.

A vacant lot which extends east to Interstate 5 and north to South 240th Street is situated beyond the eastern site boundary. A drive-in theater and parking area are north of the site. Two permanent residences and a mobile home park consisting of approximately 40 units lie immediately south of the site. The northern border of the Midway Land-fill occurs one-quarter mile to the south of the Widing property.

The area surrounding the site is composed of mixed commercial/residential properties, with heavy business use occurring along Pacific Highway South, and homes and apartments situated to the north, south, and west. The population within one mile of the site is approximately 10,816 people. Approximately 56,000 people live within three miles of the site (6).

5.0 TOPOGRAPHY AND DRAINAGE

The Widing Transportation site is located in a region of Alderwood gravelly sandy loam, with a regional slope that ranges from 6% to 15% (7). Undisturbed soil of this series consists of a moderately acidic surface mixture of organic matter and minerals, underlain by 12 to 14 inches of reddish brown, gravelly, sandy loam with numerous iron and manganese pellets (7). The surface of the Widing site has been significantly altered from its native state by clearing, filling, and leveling activities over the years. As a result, the site is now elevated approximately six feet above the adjacent eastern and southern properties and is nearly flat. The fill material which has been used on site appears to be a mixture of the Alderwood series and or glacial till, which is also common in the area.

During the period of time the truck wash was in operation (1967 to 1986), the property was slightly elevated in the center and sloped gently to the east and west (8). Surface runoff exited at the northeast and southeast corners of the property and from two shallow ditches which flowed west to Pacific Highway South along the northern and southern site boundaries (8) (Figure 1). Prior to the ditch construction, runoff allegedly flowed in an uncontrolled fashion across the southern boundary of the site onto adjoining property (9). The south ditch was eventually extended to include the full length of the southern site boundary.

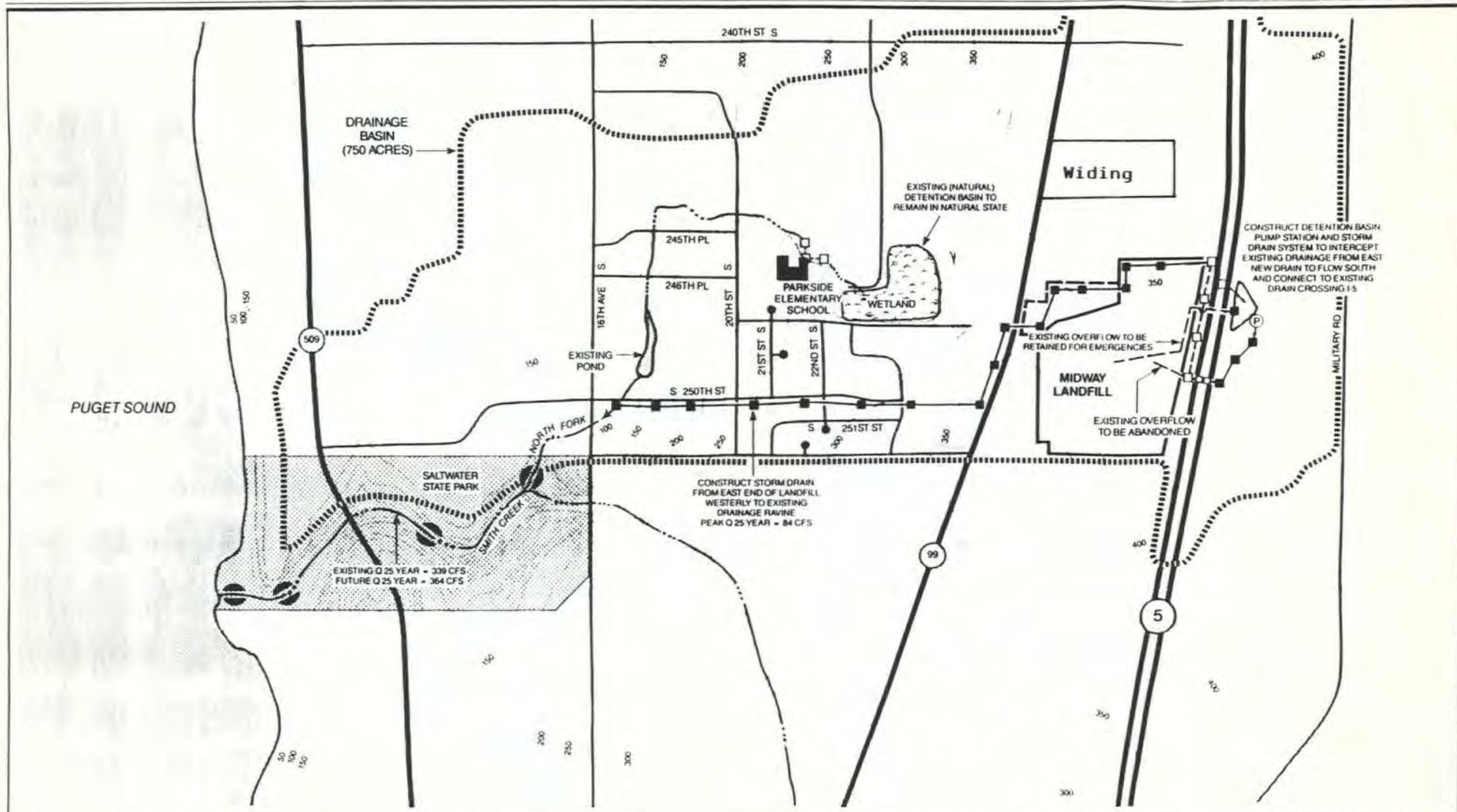
There are no major surface water bodies in the immediate vicinity of, or on the WTI property. A natural depression forms a swamp and small pond on the property to the northeast of the site. The terrain slopes gently from north to south to a low point (Midway Landfill) approximately 1/4 mile south of WTI. To the west, the land surface is almost level across Pacific Highway South, then drops steeply downward approximately 100 feet to the nearly flat Parkside Wetland (Figure 3). The Parkside Wetland is a peat bog of approximately ten acres which is drained by a ditch to a catch basin (10). It ultimately discharges to the North Fork of the Smith River, approximately 3/4 miles west of Widing. The Smith River flows through Salt Water State Park and discharges into Puget Sound (10). Elevations in the site area range from 400 feet above mean sea level (AMSL) just north of Widing, to sea level at Puget Sound, 1.5 miles to the west (3).

6.0 GEOLOGY/HYDROGEOLOGY

6.1 Regional Geology

The site is located within the Puget Sound Lowland, a broad, rolling, glacial drift plain of low relief which is bordered by the Olympic and Cascade Mountain ranges.

The physiographic features of the lowland are primarily the result of the Fraser Glaciation which occurred approximately 15,000 years ago. The sediments deposited during this period are collectively termed the Vashon Drift. The lowermost and oldest sedimentary unit is the Lawton Clay, which is composed of silts and clays. These sediments were deposited into a large proglacial lake that filled much of the region when the advancing glacier blocked the natural northward drainage of the Puget Lowland (11). Overlying the Lawton Clay is the Esperance Sand. The Esperance Sand consists of fine- to medium-grained fluvial and lacustrine sands which were deposited onto the plain after the lake had filled with silt and clay. The last two drift units consist of the Vashon Outwash and Vashon Till. Vashon Outwash is comprised of coarse-grained sand and gravel deposited by glacial melt-water streams, along with glacial advance and recessional outwash deposits. Vashon Till deposits were intercalated with outwash deposits and mantle much of the Puget Lowland. Till is a compact, unsorted, heterogeneous mixture of sand, silt, clay, and cobbles deposited directly from glacial ice. Vashon Drift was laid down on sediments deposited during the preceding interglacial and glacial periods, and onto bedrock. Bedrock is rarely



SCALE IN FEET
0 100 200



--- Existing Stream
● Proposed Culvert and Bank Improvements

□ Existing Storm Drain
■ Future Storm Drain

Source
City of Seattle Midway
Landfill Closure Plan,

1988

Figure 3
Surface Water Drainage
Patterns near

Widing Transportation, Inc.

exposed in the lowland and consists of Tertiary volcanic and sedimentary rocks. Depth to bedrock is highly variable and can be as deep as 4,000 feet in places (12).

6.2 Site (Local) Geology

Local geologic and hydrogeologic conditions have been well established as a result of several geotechnical investigations performed at the Midway Landfill, located approximately 1/4 mile south of the Widing Site.

The surface deposits in the study area consist of several feet of fill material or recent alluvium. Underlying these deposits or exposed in some places, is a layer of Vashon Drift, consisting mostly of outwash sand or till, ranging from 10 to 60 feet in thickness. Two-hundred feet of gravel underlain by 80 to 180 feet of sand and silt occurs beneath the Drift. Both of these deposits have been attributed to a pre-Vashon glacial period (13). Underlying these deposits is a heterogeneous mixture of silty sand and gravel alternating with fine-grained silt and sand. This deposit is thought to be interglacial in origin and occurs at depths of approximately 300 feet below the study area (13).

6.3 Regional Hydrogeology

The Puget Lowland in the vicinity of the site contains extensive ground water resources. Productive aquifers occur in many sand and gravel deposits of both glacial or interglacial origin (14). The uppermost productive aquifers typically occur in Vashon advance outwash sands, however, perched zones of ground water may occur in younger deposits resting on the less permeable Vashon Till (14).

Productive aquifers in the older glacial deposits underlie the Vashon sand aquifers. These aquifers are typically confined and are commonly exploited by public supply wells. Regional discharge of the deeper aquifers is to Puget Sound to the west or the Duwamish Valley to the east (4).

6.4 Site Hydrogeology

The occurrence of ground water in the study area of the Midway Landfill is fairly complex as a result of the variable hydraulic conductivities of the interbedded glacial and interglacial deposits (13). Ground water is primarily encountered in perched zones within the fill, recent alluvium, or Vashon Drift. The Vashon Drift, which in other areas is a productive aquifer, does not exhibit enough saturated thickness to be considered an aquifer at this location. The most shallow productive aquifer occurs in outwash gravels originating from an earlier glaciation. Ground water in this aquifer is approximately 57 feet below the Widing site (Appendix B). Ground water flow beneath the site is thought to be toward the center of the Midway Landfill, where it then migrates through discontinuities in the underlying aquitards to recharge deeper aquifers (13).

7.0 CLIMATE

Widing Transportation, Inc. is located in King County, Washington, which exhibits a modified oceanic climate with mild winters, cool summers and heavy precipitation (7). The average annual precipitation recorded in the area is 40.74 inches (15), occurring largely during the fall and winter months as rain. The annual pan evaporation is equivalent to 23.5 inches which results in a net rainfall of 17.24 inches (15). The one year, 24-hour rainfall is approximately three inches. The average annual temperature in Seattle is 52.8°F, ranging from summer highs of 98°F to winter lows of 3°F (7).

8.0 GROUND WATER AND SURFACE WATER USE

Ground water within three miles of Widing Transportation, Inc. is used for public and private drinking water supplies. The population within three miles of the site is approximately 56,000 people, of which approximately 14,000 are residents of the City of Kent (6). The City of Kent obtains most of its drinking water from Clark and Kent springs, which are located approximately 14 miles east of the site (16). City of Kent residents in the far western regions of the city, including WTI, also obtain water from King County Water District #75 (16). Water District #75 serves approximately 45,000 people, most of whom live greater than three miles north of the site. Fifteen percent of the total water needs of District #75 are met by two wells which are between 400 and 500 feet deep, located approximately 2-1/2 miles north of Widing (16). The remaining 85% of the water supply comes from the City of Seattle water supply system. The City of Seattle does not utilize ground water for drinking.

To the northwest of Widing, Water District #54 supplies water to approximately 750 accounts in the Des Moines area (17). Many of the accounts represent multiple resident facilities such as nursing homes and apartment buildings. The water is obtained from two wells within two miles of Widing which are 244 feet deep and 328 feet deep, respectively (17). To the west and south of Widing, residents are served by either Water District #75 or the Federal Way Water District which has several wells located more than three miles south of the site (18).

Well logs were obtained for 16 private wells within three miles of WTI, 10 of which were identified for domestic use and six of which are used for irrigation, industrial, or other purposes such as heat pumps (Appendix B) (19). The City of Seattle Midway Landfill Study identified additional operating wells within one mile of the landfill, for which well logs were not found. One of these wells, the C.E. Kraft well at 4436 Reith Road, appears to be the closest domestic well to WTI, approximately 0.7 miles to the southeast (20). This well is 160 feet deep, with a static water level of 50 feet (20).

Surface water in the area is not abundant and has no known major uses. The swamp and pond area on the eastern property adjacent to Widing is the closest surface water to the site and appears to be unusable. Water rights data do not exist for the North Fork of the Smith

River or the Smith River itself, however, two water rights for recreation and beautification were located in Section 21 (Township 22N, Range 4E), the same section where WTI is located (21). Both rights were listed for unnamed streams that are tributaries of water leading to Puget Sound. The Parkside Wetland, west of Widing, is not secured and may be used for recreation by local residents or children who attend the nearby Parkside Elementary School. Water from the Smith River flowing through Saltwater State Park is used to promote plant life and wildlife for human enjoyment and ecological preservation.

9.0 OVERVIEW OF SITE OPERATIONS

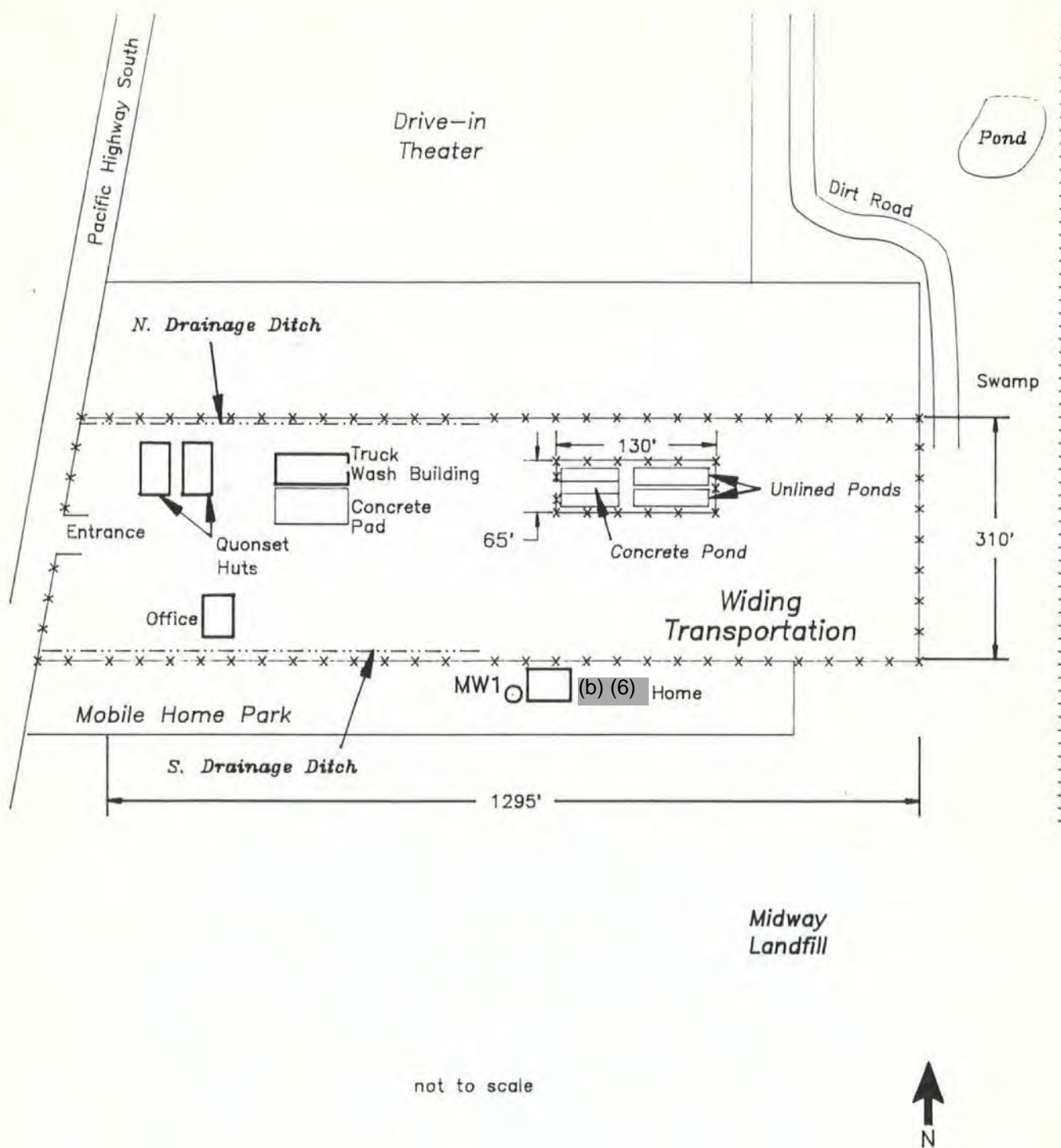
Widing Transportation History and Past Disposal Practices

Widing Transportation, Inc. was founded in 1958 by Mr. Glenn Widing in Portland, Oregon (1). The company was authorized by the Interstate Commerce Commission (ICC) Operating Authority (permit #CC-567) to haul chemicals, acids, petroleum products, paper products, and other substances in tank trucks (22). A large percentage of WTI's clients were from pulp and paper industries (2). Satellite terminals were established by Widing in Oregon, Washington, and California to facilitate tank truck maintenance and rinse-out between loads. According to Widing, the majority of their trucks were returned to the main facility in Portland for cleaning (2).

The property at the Midway location had previously been used as a golf driving range and had once been the site of a machine/auto salvage shop before it was acquired by Widing in 1967 (23). The original application for a Conditional Exception (CE) permit from the City of Kent indicated that the property was to be used as a truck terminal and storage establishment enclosed in a building (24). A public hearing was held on November 7, 1967, where those in attendance were informed that the proposed warehouse would contain parts only, and no chemicals or combustibles (25). The facility planned to service approximately 30 trucks per week. CE permit #72 was granted by the City of Kent for six months at that meeting.

In April of 1969, a truck rinse-out building was constructed on site, along with a series of three settling ponds to contain waste rinsate. One of the settling ponds was lined with concrete and was divided into three chambers. The other two ponds were unlined (Figure 4). By January of 1970, Widing had been authorized to store hazardous and flammable materials on site by the Kent Fire Department (26). At the same time, adjacent property owners had filed complaints with the City regarding excessive noise at all hours and uncontrolled surface water drainage onto adjoining property (27).

No records of site activities from 1971 to 1979 could be located. During that time, however, three off-site spills involving WTI trucks were noted: the dumping of wastewater containing phenolic resin in Aberdeen, Washington (May 1972); an oil spill at a Boeing facility



LEGEND

- x-x-x- Fence
- MW1 Monitoring well

ecology & environment, inc.	
Job: F10-8706-08	Waste Site: WA 0523
Drawn by: D. P.	Date: Aug. 1, 1988

FIGURE 4
SITE MAP CIRCA 1984
WIDING TRANSPORTATION, INC.
Kent, WA

(December 1973); and an oil spill at a Time Oil facility (March 1976). The Washington State Department of Ecology (Ecology) levied fines against Widing of \$250.00 for each of the oil spills (28).

A site inspection by Ecology on September 25, 1979, indicated that the rinsate treatment system was inadequate, that there was evidence of past pond overflows, and that sludge had been dredged from the ponds and disposed of on the site surface. A subsequent Ecology memorandum and Recommendation for Enforcement Action found Widing in violation of Water Quality Regulatory Notice and Order RCW 90.48.120 and stated that as a result of the inadequate treatment system, surface water and ground water contamination were possible. To correct this situation, Glenn Widing indicated that a concrete slab with sides would be constructed to contain dredged sludge prior to final off-site disposal (29). No evidence was found to indicate that this slab was actually ever constructed.

During this same time period, the EPA received complaints of odors emanating from the site and of wastewater being dumped on the open ground at the site. On October 10, 1979, the Puget Sound Air Pollution Control Agency (PSAPCA) fined Widing \$250.00 under Civil Penalty #4497 for an uncontrolled release to the air (30). Widing attributed the incident to sodium sulfite which reacted with air and other chemicals in the cleaning facility. An identical air release occurred again a year later in December of 1980, and was possibly made more severe by a temperature inversion (30).

Various other complaints and violations were noted throughout 1980 and 1981, including a public hearing for citizen complaints (February 20, 1980) (31), more odor complaints, settling pond water being discharged to an adjacent swamp (Ecology, December 22, 1980), and trucks being cleaned and drained on the site surface (January 1, 1981) (32).

Beginning in January of 1981, unspecified improvements of the truck wash facility were allegedly made to alleviate the problem of discharge to the nearby swamp and to improve the condition of the settling ponds (33). In July 1981, it was noted that "heels," or residual, undiluted tank truck contents were being containerized and taken to Western Processing (a waste receiving company) every three to six months (34). According to Widing, approximately 490,000 gallons of excess truck rinsate and heels were transported to Western Processing between 1969 and 1983 (35). Some heels were allegedly drained into a large holding tank on site, which was transported to the Widing Portland facility when full (35). In September 1981, 10 dump truck loads of sludge, previously dredged from the ponds and stored on the site surface, were disposed of at Midway Landfill approximately one-quarter mile south of the site (36).

In August of 1982, the EPA RCRA (Resource Conservation and Recovery Act) Program Development Section withdrew Widing's Hazardous Waste Part A permit in response to Widing's claim that hazardous wastes were not treated, stored, or disposed of on site.

Two complaints were noted in 1983 and early 1984. In 1983, the owner of an adjacent parcel of land claimed that Widing was dumping chemicals into a trench leading onto her property (26). The other complaint involved an odor problem and was attributed to a broken steam hose in the truck wash facility (36).

In late 1984, Widing stopped using the settling ponds and began making arrangements to move the facility to a more suitable location with a METRO sewer connection. According to a Widing representative, rinsate generated between 1984 and 1985 was stored in a tank at the Midway site and was later disposed of at the company facility in Portland, Oregon (37). Many trucks were also allegedly re-routed to be rinsed at locations other than Midway (37).

The new site was also located in the City of Kent, and Widing was granted a six-month Use Permit by the City and a METRO Discharge Permit (#7501) during the summer of 1985. A holding tank with connections to the sewer lines was established, but actual use of this facility did not begin until November 1985 (38). The Kent Use Permit was extended to May 1, 1986.

To meet RCRA requirements, Widing installed at least part of a Great Lakes brand filter treatment system at the Midway Site in August of 1985 (39), to treat the estimated 325,000 gallons of rinsate remaining in the settling ponds (40). Treatment consisted of passing the rinsate across a filter cake of diatomaceous earth (41). The filtrate was then disposed of through the METRO sewer connection at the new Kent facility (42). Also during August, the Kent Highlands Landfill rejected a shipment of improperly dried sludge from Widing, which was later classified as a "dangerous waste" by Ecology (November 19, 1985). The rinsate filtering continued until the ponds were emptied in mid-March of 1986 and Ecology prepared to supervise the final closure of the ponds.

Also in mid-March of 1986, Widing made arrangements with the Kent Highlands Landfill staff to dispose of a sizable amount of accumulated sludge, claiming that the sludge had been approved for disposal the previous year (43). They began hauling the sludge to the landfill, which was brought to the attention of Ecology (probably by a citizen inquiry) and the Kent News Journal newspaper. Ecology and Seattle-King County Health officials determined that the sludge must be returned to Widing pending the outcome of laboratory analysis, but it was discovered that some of the sludge had been buried under 12 feet of refuse at the landfill (43). Ultimately, in May, the sludge was approved to remain in place at the landfill as solid waste, and the laboratory analysis reportedly revealed "no significant problem" from tests conducted for volatile organic hydrocarbons (44).

The last reported spill on site occurred on March 5, 1986, when a material claimed by Widing to be fish fertilizer flowed from the truck rinse facility and entered the north drainage ditch. The material was reportedly pumped out of the ditch and the ditch was flushed with clean water (45).

Widing discontinued their plans to develop the new Kent truck wash facility in the spring of 1986 (46). The temporary storage tank was removed and the facility closed by May 19, 1986. On May 31, 1986, Widing Transportation was sold to Arrow Trucking of Portland (47). Widing shareholders retained ownership of the Midway site property (2).

When Widing operations ceased at Midway in June 1986, Ecology required that all lagoons, ponds, holding tanks, and sludge be properly cleaned up (48). A laboratory analysis of material from the bottom of the ponds at the sludge-soil interface revealed phthalate levels in excess of 100 ppm (49), which caused this and previously excavated material, including sludge, to be classified as "dangerous waste" (48). Ecology required that all excavated material be removed from the site and taken to a hazardous materials disposal facility in Arlington, Oregon (48). Samples taken from 6, 12, and 18 inches below the pond bottoms indicated a rapid drop off in phthalate concentration with depth. Eventually, the north pond, which contained the highest levels of phthalates, was excavated to 30 inches below the original pond bottom, until an acceptable level of phthalates was achieved (50). A level of less than 100 ppm of phthalates was considered acceptable by Ecology (51). A total of 903.6 tons of soil and sludge was taken to Oregon for disposal (52). The concrete from the concrete lined pond was sand blasted on site to remove any contaminants and was disposed of at Coal Creek landfill in July 1986 (2). The residue from the sand blasting was collected and included with the waste removal to Arlington (47).

As part of the closure plan, Ecology intended to sample ground water near the site to assess the potential impact of the Widing operation on underlying aquifers. An attempt to sample ground water beneath the settling ponds was made in the fall of 1986 under the direction of Mr. Mike Ruef of Ecology. Two boreholes were drilled to a depth of 35 feet, but were sealed when water was not encountered at that depth (53). It was the decision of Mr. Ruef to discontinue drilling rather than penetrate the confining layer between the former ponds and the underlying aquifer (54).

The excavated area included all three settling ponds and the sludge storage area north of the ponds (35). Clean fill material was obtained from the Renton METRO project. According to the final site closure report submitted by Widing to Ecology in January 1987, the site was officially leveled and closed on December 10, 1986.

10.0 CHARACTERIZATION OF THE WASTE STREAM

Details of the precise quantity or composition of materials rinsed out of Widing's tank trucks into the rinsate ponds are not available. The ICC Operating Permit issued to Widing allowed them to legally haul a variety of substances, ranging from toxic or hazardous chemicals to foodstuffs (22). Three lists of products transported by Widing were obtained during this investigation. Table 1 provides a list of products from 1978 and the annual percentages of each, but this list may pertain only to the Portland, Oregon terminal (35). Table 2 lists products transported in 1985 as claimed by Widing in a permit application to the

Metro sewer system. Table 3 is an undated list of chemicals which, according to Widing, represents those substances rinsed at the Midway site. Some substances were transported in dedicated trucks which were not rinsed out between each load. WTI was unable to provide a comprehensive list of all substances transported during the history of their operation at the Midway location, or the quantities of each substance transported.

TABLE 1
PRODUCTS TRANSPORTED BY WIDING TRANSPORTATION, INC.
CIRCA 1978

Commodity Cleaned	% of Annual Total
1. Polyester and Alkyd Resins	3.4
2. Sulfur Lime	4.1
3. Polyvinyl Acetate	1.9
4. Latex	7.2
5. Defoamer	5.8
6. Paper Sizing	2.9
7. Lignin Liquor	5.3
8. Resins	21.7
9. Caustic	9.9
10. Formaldehyde	2.4
11. Soda of Silicate	1.1
12. Water Whites (organic solvent)	14.1
13. Phenol	3.1
14. Telone (pesticide)	0.4
15. Wood Preservatives	0.5
16. Acids	5.1
17. Tall Oil	2.4
18. Wax	7.9
19. Miscellaneous	0.8
TOTAL	100 %

TABLE 2

PRODUCTS TRANSPORTED BY WIDING TRANSPORTATION, INC.
 CIRCA 1985, OVER A FOUR-MONTH PERIOD
 (Reproduced from WTI document as received)

Mineral Spirits	Calcium Chloride
Nitric	Micro-sol
Turpentine	Perez 631 (Flocculant)
Sufonic	Tandemol (Rolling oil)
Caustic	Phenol
Alkyd Resin	Varnish
Phos Acid	Tallow
Chlorate	Aqua Ammonia
Sulfuric Acid	Silicate
Latex	Sanisizer
Phenolic Resin	Alum
Alcohol	Borol
Anti-freeze	Paracol
Water While	Formaldehyde
Acetone	Pamak
Butyl Acetate	Feed Supplement
Diacetone Alcohol	Defoamer
Diethylene Glycol	Poison B
Ethylene Glycol	Copper Sulfate
Ethylene Acetate	Rosin Size
Isopropyl Alcohol	Envelop Glue
Iso Butyl Acetate	Shellsol
Methyl Ethyl Ketone	Igepal (soap base)
Methanol	Magnafloc (flocculant)
Methylene Chloride	Vapam (soil fumigant)
Stylene	Lube Oil
Trichloroethylene	Wax (petroleum)
Xylene	Kerosene
Toluene	Fish Oil
Hampene (soap base)	Zinc Chloride
Aquapel	Neuphor

11.0 SITE INSPECTION BY E&E

The initial E&E site inspection of Widing Transportation took place on July 13, 1987, at 1000 hours. Those present during the inspection were Gloria Skinner and Lynn Guilford of E&E, William Wright of Ecology, and Peter J. Pedone representing Widing. Photographs from this visit are in Appendix C. Mr. Pedone presented a brief history of the Widing Transportation business operation at the Midway location, but provided few exact details at that time. Following the introduction, he led the group on a tour of the site where the truck rinse facility and settling ponds were formerly located. The meeting concluded at approximately 1115 hours.

TABLE 3*

PRODUCTS CLAIMED BY WIDING TO REPRESENT SUBSTANCES RINSED AT
MIDWAY TRUCK TERMINAL (Undated)

Trade Trade Name	Proper Shipping Name	Hazard Classification	UN or NA Hazard Identifier	Rinsed or Dedicated
Weak Acid	Sulphuric Acid (20-40%)	Corrosive Liquid	UN 1830	Rinsed
Alum	Liquid Aluminum Sulphate	ORM-B	UN 1760	Dedicated
Paper Resin (Phenolic)	Phenolic Resin Phenolic Resin	ORM-E ORM-E	NA 9188 NA 9188	Rinsed
Spent Solvent Waste (Re-run Solvent)	Petroleum Naptha Petroleum Naptha	Combustible Liquid Combustible Liquid	UN 1256 UN 1256	Dedicated
M-Grade, 50% Caustic (Soap) 50% Caustic	Sodium Hydroxide Sol. Sodium Hydroxide Sol. Sodium Hydroxide Sol.	Corrosive Liquid Corrosive Liquid Corrosive Liquid	UN 1824 UN 1824 UN 1824	Dedicated
Ru Silicate D. Silicate	Silicate Silicate	Non-Hazardous Non-Hazardous	None None	Rinsed
Caustic Potash	Potassium Potash	Corrosive Liquid	UN 1814	Rinsed
Sanisizer 7-11 Sanisizer	Plasticizer, Resin Platicizer, Resin	Non-Hazardous Non-Hazardous	None None	Rinsed
#6 Fuel Oil	Fuel Oil	Combustible Liquid	UN 1993	Rinsed
Thinner 450 Thinner 350-B	Naptha Solvent	Combustible Liquid	UN 1256	Evaporates/Dedicated
A/C De-Icer Aircraft De-Icer Glycol	Aircraft De-Icing Sol. Aircraft De-Icing Sol. Aircraft De-Icing Sol.	Non-Hazardous Non-Hazardous Non-Hazardous	None None None	Evaporates/Dedicated
Dry Urea Urea	Urea Urea	Non-Hazardous Non-Hazardous	None None	Dry Product Blown-out
MEK	Methyl Ethyl Ketone	Flammable Liquid	UN 1193	Evaporated/Dedicated

Other products on the Transportation Logs are identified by Proper Shipping Name.

* This table has been reproduced from WTI document as received.

12.0 SAMPLING PROGRAM

12.1 Previous Sampling

Previous sampling activities at the Widing property have been conducted by Ecology, private consultants, and Widing personnel during the pond closure activities. In addition, the City of Seattle has conducted extensive sampling of the immediate area near Widing as part of the Midway Landfill Closure project. Locations of pertinent previous sampling sites are shown in Figure 5.

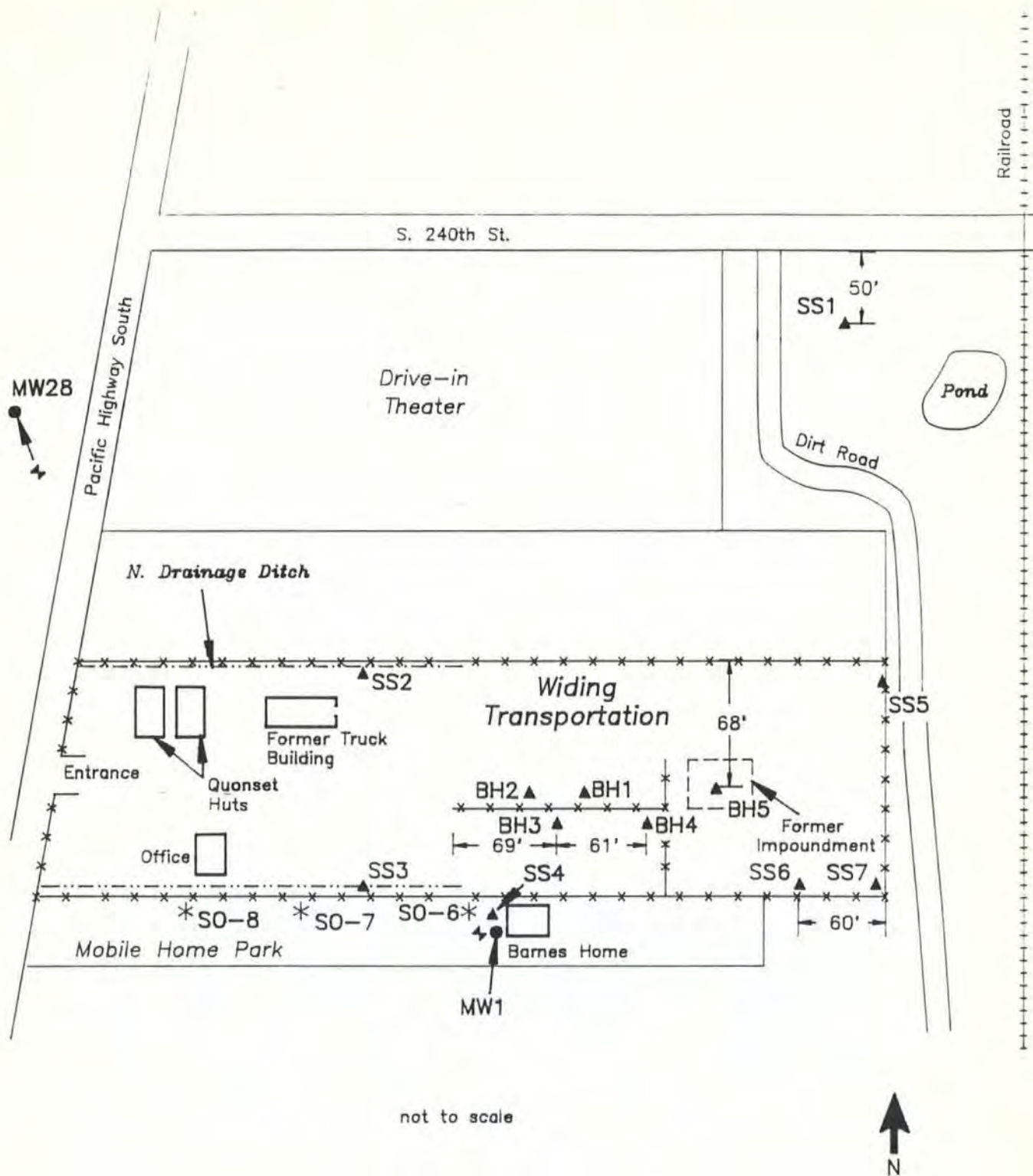
As a result of the Ecology settling pond closure and testing requirements for sludge prior to disposal, several chemical analysis reports representing dried sludge samples and sludge-soil interface samples were available. The E&E sampling effort did not duplicate previous on-site sampling matrices or locations, however, data from previous on-site sampling were considered valuable in establishing historical conditions at the site. Copies of original sample analysis reports are provided in Appendix D.

Because of the proximity of Widing Transportation to the Midway Landfill, portions of the City of Seattle Midway Landfill Closure Plan provided information helpful to this investigation. Two monitoring wells installed by the City were sampled by E&E. Previous sampling data for these wells are included in Appendix E. Well logs appear in Appendix B. Selected data have been included in data tables found in Section 14 of this report for comparison to E&E monitoring well sample analysis results. Soil samples were also collected by the City of Seattle during the Midway Landfill study. Three of these soil samples were taken from an area near the southern border of the Widing property. Copies of the original analytical data for these soil samples appear in Appendix E and are also included in data tables found in Section 14 of this report for comparison to E&E analytical results.

12.2 E&E Sampling Program

E&E's sampling program at WTI was intended to determine if contaminants from the rinsate ponds had migrated laterally through the soil beyond the pond closure excavation area or vertically to ground water, and to determine if alleged dumping of wastes had resulted in contamination of soil on or near the site. As a result, samples were taken from selected locations where contaminants from the truck rinse operation were suspected to exist, based on historical evidence and allegations (Figure 5). A sample summary is presented in Table 4. To accomplish sampling objectives, the following general field activities were conducted:

- o ground water samples were collected from two City of Seattle monitoring wells, one at a location upgradient from the site and the other at a downgradient location;
- o six shallow soil samples were taken from locations on and off site;



LEGEND

- x - x - x - Fence
- MW1 Monitoring well
- ▲ SS7 Soil sample
- ⚡ Water sample
- *SO-6 City of Seattle soil sample

ecology & environment, inc.	
Job: F10-8706-08	Waste Site: WA 0523
Drawn by: D. P.	Date: July 22, 1988

FIGURE 5
SAMPLE LOCATIONS MAP
WIDING TRANSPORTATION, INC.
Kent, WA

TABLE 4

SUMMARY OF SAMPLES FROM E&E INSPECTION APRIL 11, 1988,
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL

E&E Sample Name	Sample Location	Date of Collection	Sample Matrix	Sample Type	Sample Depth
MW-1	Monitoring Well 1	04/11/88	Water	Grab	--
MW-28	Monitoring Well 28	04/11/88	Water	Grab	--
SS-1	Background	04/11/88	Soil	Grab	0 - 2 feet
SS-2	North Ditch	04/11/88	Soil	Grab	0 - 6 inches
SS-3	South Ditch	04/11/88	Soil	Grab	0 - 6 inches
SS-4	(b) (6) Yard	04/11/88	Soil	Grab	0 - 8 inches
SS-5	N.E. Corner	04/11/88	Soil	Grab	0 - 11 inches
SS-6	South Side	04/11/88	Soil	Grab	0 - 7 inches
SS-7	S.E. Corner	04/11/88	Soil	Grab	0 - 6 inches
BH-1	Random Borehole	05/04/88	Soil	Composite	~ 20 feet
BH-2	Random Borehole	05/04/88	Soil	Composite	~ 10.5 feet
BH-3	Random Borehole	05/04/88	Soil	Composite	~ 23 feet
BH-4	Random Borehole	05/04/88	Soil	Composite	~ 20 feet
BH-5	Borehole, Former Impoundment	05/03/88	Soil	Composite	~ 9 feet

- o five soil boring samples were collected on site;
- o a background soil sample was collected off site; and
- o all samples collected were analyzed for elements and compounds found on the EPA Target Compound List (TCL) (Appendix F).

Photos taken during sampling are found in Appendix C.

Ground Water Sampling

Two ground water samples were collected from City of Seattle monitoring wells MW-28 and MW-1 during the E&E FIT inspection on April 11, 1988. MW-28 is located northwest of Widing across Pacific Highway South. Previous studies by the City of Seattle indicate that this well is upgradient of the Widing site. MW-1 is located on the property of (b) (6) whose residence is approximately 50 feet from Widing's southern property boundary. This well is considered to be downgradient of Widing.

Prior to the collection of ground water samples, the static water level in each well was measured and recorded. Three well volumes were then purged using a submersible pump. Several samples were obtained during purging to determine stabilization of ground-water parameters (pH, conductivity, temperature) and the subsequent presence of formation water. Field measurements are illustrated in Table 5. A pH value was not obtained for MW-28 due to equipment failure in the field. Ground water samples were obtained using a clean, decontaminated Teflon bailer.

TABLE 5
FIELD MEASUREMENTS FOR GROUND WATER SAMPLES
WIDING TRANSPORTATION, INC.
April 11, 1988

Well	Static Water Level	Total Purge Time	(Stabilized Conditions)		
			pH	Temperature	Conductivity
MW-28	92.39 feet	18 minutes	---	17.8°C	45.8 umhos
MW-1	62.88 feet	3 hours	6.99	13.0°C	179 umhos

Ground water cyanide samples were field screened for the presence of sulfide using lead acetate and potassium iodide papers. Samples were preserved with sodium hydroxide and packed in ice immediately after collection.

Soil Sampling

Surface soil grab samples were collected on April 11, 1988 from the north drainage ditch on site (SS-2), the south drainage ditch (SS-3), the northeast and southeast site corners (SS-5, SS-7), the site southern boundary (SS-6) and the (b) (6) residence (SS-4) (Figure 5). These samples were obtained from an average of six inches below the ground surface (BGS) using a decontaminated hand auger. A background soil sample (SS-1) was obtained (from auger cuttings) north of the Widing site from approximately two feet BGS, using a Minute Man power auger.

Soil boring samples were obtained via a drilling subcontractor (refer to Section 13 of this report). On May 3, 1988, a composite soil boring sample was obtained from the location of the former impoundment east of the former rinsate ponds (BH-5), from a depth of nine feet. The following day, composite borehole samples were obtained from four locations south of the former rinsate ponds at depths between 20 and 25 feet (BH-1 through BH-4) (Figure 5). Composite samples were achieved by placing aliquots of soil from the full length of the split spoon sampler or from the lowest two feet of the auger flight into a clean stainless steel bowl. Samples for VOC analysis were collected by placing soil from several parts of the bowl into the sample container, using a clean stainless steel spoon. The remainder of the sample in the bowl was thoroughly homogenized by stirring with the spoon before aliquots of the sample were placed in the sample containers. These samples were obtained to determine if lateral migration of rinsate pond contaminants had occurred and to investigate allegations of buried sludge in the vicinity. Soil samples were collected and shipped in accordance with EPA-approved sampling methods.

13.0 DRILLING PROGRAM

In order to assess the potential lateral migration of contaminants in soils at the site, and the potential presence of buried wastes, a total of five boreholes were drilled with sampling and analysis occurring at the deepest depth attained. The borehole locations were selected in those on-site areas that involved alleged rinsate pond sludge burial (Figure 5). Table 6 lists the respective depth attained, specific sampling interval, and sample description (including MUNSELL color designation) for each borehole.

A KW-61 truck-mounted hollow-stem auger rig was utilized to negotiate each borehole to its respective depth. The maximum depth attained at each boring location was governed by refusal of the equipment to penetrate to a deeper layer due to the presence of large boulders or cobbles at depth. Five to ten-foot offset distances were used at those locations (BH-1) where the initial boring could not be advanced past five feet.

TABLE 6

BOREHOLE DEPTHS AND SAMPLING INTERVAL
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL

Borehole #	Maximum Depth (feet)	Sampling Interval (feet)	Sample Description
BH-1	20.0	20.0 - 22.0	Dusky yellowish green (10 GY 3/2), silty clay
BH-2	10.5	10.5 - 12.5	Native soil, grayish green (10 GY 5/2), silty clay
BH-3	23.0	23.0 - 25.0	Dusky yellowish green (10 GY 3/2), silty clay
BH-4	20.0	20.0 - 22.0	Dusky yellowish green (10 GY 3/2), silty clay
BH-5	9	7.0 - 9.0	Native soil, grayish green (10 GY 5/2), silty clay

Borehole sampling for BH-5 involved the collection of a small recovery of soil via a two-inch split-spoon sampler. Additional soil was collected directly from the auger flights to provide adequate volume. Collection of soil from the auger was performed when the two-inch split-spoon sampler was repeatedly jammed by cobbles during drilling. Three- and six-inch split-spoon samplers were subsequently secured by the subcontractor for the remaining four boreholes. Sample collection methodologies for boreholes BH-1, BH-2, BH-3, and BH-4 entailed augering to the required deepest depth, inserting a respective stainless steel split-spoon sampler through the center of the hollow-stem auger, and negotiating the sampler through a two-foot interval (the split-spoon sampler length) with a 900 pound slide hammer. The split-spoon sample was collected from aliquots collected along the respective soil column. Soil was collected with a stainless steel spoon, homogenized in a stainless steel mixing bowl, and placed in labeled glass jars with Teflon-lined lids.

Decontamination was performed prior to the commencement of drilling and following the completion of each borehole. The drill rig and all associated drilling implements including bits, tools, drilling rod, and auger sections were decontaminated. The decontamination procedure involved an initial hot pressure/steam wash, analconox and tap water wash, tap water rinse, acetone rinse, methanol rinse, a deionized carbon-free water rinse, and a final steam wash. Sampling implements (gloves, split-spoon sampler, spoons, and bowls) were decontaminated using the same procedure, however, the deionized, carbon-free wash succeeded the steam wash. Equipment not used immediately after decontamination was wrapped in polyethylene plastic bags until needed.

Borehole abandonment was accomplished on each boring after sample collection. Drill cuttings were drummed and left on site pending sample analysis. A bentonite slurry was pumped into the borehole cavity via a tremie tube as the augers were simultaneously withdrawn. This procedure maintained borehole integrity and prevented bridging during the pumping. Twenty-four hours after the initial abandonment, bentonite was again pumped into any remaining borehole space (as a result of settling) to bring the bentonite level to ground surface.

14.0 SAMPLING RESULTS AND DISCUSSION

Complete data packages (with quality assurance memoranda) for this site inspection are located in Appendix G. Only those substances detected are included in the following data tables and discussion.

14.1 Ground Water Sampling Results

14.1.1 Inorganic Elements

Table 7 provides analytical data for detected inorganic elements in ground water samples. More than half of the 24 metals analyzed for (including cyanide) were not detected in MW-1 or MW-28. Of those metals detected, none occurred at levels which approached drinking water standards, where such standards were available. Two elements, manganese and sodium, were detected in the transfer blank as well as the samples. Water from MW-28 contained higher concentrations of all detected metals except vanadium, which was found at an estimated concentration of 7.1 ug/l in MW-1. These results are generally consistent with those obtained by the City of Seattle's testing of these wells in 1985, 1986, and 1987 (shown for comparison in Table 7).

14.1.2 Organic Compounds

Analytical results for volatile organic compounds (VOCs), semi-volatile compounds, and pesticides in ground water are illustrated in Table 8. An estimated value of 3 ug/l of the VOC methylene chloride was detected in MW-1. No other VOCs were detected in either MW-1 or MW-28. The semivolatile compound bis-2(ethylhexyl)phthalate was detected in both well samples at estimated values of 6 ug/l in MW-28 and 3 ug/l in MW-1 and was also detected in the blank at 4 ug/l. This data suggests that no obvious migration of this phthalate to ground water has taken place. A higher level of this compound (110 ug/l) was detected in MW-1 by the City of Seattle in 1986, which coincided with the Widing pond closure. This compound has been absent or detected at very low levels in samples taken before and after 1986 (55). Caprolactam, a tentatively-identified compound (TIC), was detected in MW-1 during the most recent sampling, at an estimated concentration of 7 ug/l. An unspecified TIC halogenated hydrocarbon was estimated at 26 ug/l in the blank but did not appear in either well sample. No pesticides were detected in MW-1 or MW-28 during this sampling effort or by the previous City of Seattle sampling effort. No VOCs or pesticides were detected in the transfer blank.

TABLE 7

INORGANIC RESULTS FOR DETECTED ELEMENTS IN GROUND WATER
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
 (ug/l)

Elements	Date Collected:	MW-28 Background	MW-1 (b) (6) Home)	Transfer Blank	City of Seattle MW-1			City of Seattle MW-28	
		04/11/88	04/11/88	04/11/88	05/21/85	11/00/86	01/00/87	07/00/87	09/00/87
Aluminum		623 J	150 UJ	57.1 UJ	-	+	+	+	+
Arsenic		1.6 U	2.1 J	1.6 U	-	-	-	-	-
Barium		21.2 U	21.2 U	21.2 U	10	+	+	+	+
Cadmium		1.6 U	1.6 U	1.6 U	-	0.4	0.9	1.3	0.9
Calcium		44,800	14,800	27.3 U	+	17,600	16,900	55,400	40,600
Chromium		7.3 J	2.8 U	2.8 U	10	10	10	-	-
Copper		57.4	8.6 U	8.6 U	40	-	-	-	-
Iron		461	80.4 UJ	14.1 U	1,210	80	270	950	-
Lead		14.0 UJ	7.4 UJ	3.7 UJ	-	-	-	2	-
Magnesium		27,500 J	6,870 J	28.8 UJ	+	9,900	8,400	39,400	25,100
Manganese		483	4.3 J	1.2 J	5	20	30	470	390
Mercury		0.88	0.1 U	0.1 U	-	-	-	-	-
Nickel		8.3 U	11.5 J	8.3 U	-	20	-	-	10
Potassium		3,720 J	1,630 J	451 UJ	+	1,700	11,900	4,200	5,300
Sodium		14,500	7,710	608 J	+	7,700	7,600	20,500	15,500
Vanadium		4.9 J	7.1 J	4.4 U	+	+	+	+	+
Zinc		12.6 UJ	34.0 UJ	8.1 UJ	10	-	120	20	10

U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).

UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.

+ - Element not tested for.

- - Not detected.

TABLE 8

ORGANIC RESULTS FOR DETECTED
VOCs, SEMIVOLATILE COMPOUNDS AND PESTICIDES IN GROUND WATER
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(ug/l)

Compounds	Date Collected:	MW-28	(b) (6)	MW-1	Blank	City of Seattle MW-1			City of Seattle MW-28	
		Background		Home)		05/21/85	11/00/86	01/00/87	07/00/87	09/00/87
		04/11/88		04/11/88	04/11/88					
<u>VOCs</u>										
Methylene Chloride		9 U		3 J	8 U	+	-	-	-	-
Chloroform		5 U		5 U	5 U	+	1	-	-	-
Tetrachloroethene		5 U		5 U	5 U	+	3	3	-	-
Acetone		10 U		10 UJ	10 U	+	TR	-	14	-
<u>Semivolatile</u>										
bis(2-Ethyhexyl)phthalate		6 J		3 J	4 J	-	110	TR	-	-
Caprolactam (TIC)		-		7 J	-	+	+	+	+	+
Halogenated Hydrocarbon (TIC)		-		-	26 J	+	+	+	+	+
<u>Pesticides</u>										
None Detected										

- U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.
 J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).
 TR - Trace, quantity less than maximum quantifiable limits.
 UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.
 TIC - Tentatively-identified compound.
 + - Element not tested for.
 - - Not detected.

14.2 Soil Sampling Results

14.2.1 Inorganic Elements

Inorganic analytical results for soil samples are given in Table 9. Selenium, silver, and cyanide were not found in any of the samples obtained. Lead was detected in SS-3 at 72 mg/kg, more than 10 times the background level of 5.7 mg/kg. Copper also occurred at an elevated concentration (137 mg/kg) in this sample, eight times higher than the background level of 16.6 mg/kg. During the 1987 City of Seattle soil testing, similar levels of copper and lead were found in soil samples taken within several feet of SS-3 (Figure 5) (data is shown for comparison in Table 9). The source of copper in these soils is unknown. It is speculated that the lead may have originated with leaded gasoline, which may have been carried from the site surface into the ditch by surface water runoff. A noticeable decrease in aluminum and zinc concentrations occurred from the shallow soil samples to the deeper borehole samples (BH-1 through BH-4). The average aluminum concentration in the shallow soil samples was 18,412 mg/kg, compared with an average of 8,870 mg/kg in samples from approximately 25 feet below the ground surface. Zinc was detected at an average concentration of 58.7 mg/kg in shallow soils, compared to an average of 24 mg/kg in deeper soils. These results most likely reflect the differences in occurrence of the metal in native soils (boreholes) and fill (shallow soils). Mercury was detected in BH-5 (0.10 mg/kg) and BH-2 (0.09 mg/kg). The origin of mercury in these samples is not known.

14.2.2 Organic Compounds

Analytical results for VOCs, semivolatile compounds, and pesticides in soil samples appear in Table 10. Methylene chloride was detected in all shallow soil samples and the background sample, but was not found in any of the deep borehole samples. Acetone was detected in all but two samples, including the background sample. Two of the borehole samples, BH-1 and BH-3, contained between 10 and 20 times the background level of acetone. Both methylene chloride and acetone are common laboratory contaminants, but the high levels of acetone detected in two samples may indicate contamination from an on-site source.

Di-n-octylphthalate, a semivolatile compound, was estimated at 54 ug/kg in BH-1. Molecular sulfur (TIC) was in three of the borehole samples while 5-ethyl-2,2-dimethyl-1,3-dioxane (TIC) was identified in SS-5 at 1,300 ug/kg (J). Other semivolatile compounds listed in Table 10 were detected in the City of Seattle samples but were not detected in samples collected by E&E. A single pesticide residue (4,4-DDE) was detected in SS-4 ((b) (6) yard) at 19 ug/kg. Neither 4,4-DDE or any other pesticides were detected in the surface soil samples obtained on site or in the background soil sample. Pesticide data for BH-1 through BH-5 failed quality assurance criteria and were rejected.

TABLE 9

INORGANIC RESULTS FOR DETECTED ELEMENTS IN SOILS
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(mg/kg)

Elements	Date Collected:	SS-1	SS-2	SS-3	SS-4 (b) (6)	SS-5	SS-6	SS-7	BH-5
		Background 04/11/88	N. Ditch 04/11/88	S. Ditch 04/11/88	Yard 04/11/88	NE Corner 04/11/88	South Side Boundary 04/11/88	SE Corner 04/11/88	Former Impoundment 05/03/88
Aluminum		22,700	16,200	17,300	24,100	21,300	11,400	16,600	17,700
Antimony		3.2 J	3.0 UJ	3.2 J	4.1 J	3.1 UJ	2.8 UJ	2.8 UJ	11.5 U
Arsenic		5.4	6.4	6.4	9.2	10.0	4.5	6.3	6.1
Barium		110	71.3	84.2	129	108	52.3	77.9	118
Beryllium		0.23J	0.23J	0.24J	0.38J	0.36J	0.13U	0.21J	0.74U
Cadmium		0.37U	1.0	0.64J	0.38U	0.38U	0.34U	0.35U	1.2 U
Calcium		2,380	4,570	3,300	2,550	2,530	3,980	3,040	4,600
Chromium		36.1 J	38.1 J	52.5 J	29.8 J	43.8 J	24.6 J	27.3 J	41.8
Cobalt		11.2	9.5 J	8.0 J	9.0 J	11.4	7.3 J	8.9 J	17.0
Copper		16.6	71.7	137	20.5	32.7	19.5	26.4	31.0
Iron		20,700	18,500	18,500	19,000	24,900	14,900	18,700	28,700
Lead		5.7	24.2	72.0	19.8	11.6	27.3	17.8	4.6
Magnesium		5,600	5,080	4,040	3,940	5,830	3,730	4,650	7,810
Manganese		253	305	240	483	311	227	256	576
Mercury		0.06U	0.06U	0.06U	0.06U	0.06U	0.05U	0.05U	0.10
Nickel		48.6	34.1	34.7	36.6	51.9	24.5	33.4	41.4
Potassium		623 J	244 J	534 J	215 J	430 J	362 J	403 J	746 J
Silver		1.1 U	1.0 U	1.1 U	1.1 U	1.1 U	0.97U	1.0 U	24.5 U
Sodium		52.8 U	378 J	180 J	54.0 U	54.3 U	160 J	101 J	358 U
Thallium		0.45J	0.39J	0.41U	0.40J	0.40U	0.36U	0.37U	13.2 UJ
Vanadium		52.7	54.2	52.8	47.9	60.5	42.1	48.6	63.4
Zinc		54.7	91.9	84.7	47.1	48.6	42.5	46.8	53.6

U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).

UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.

+ - Element not tested for.

- - Not detected.

TABLE 9 (CONT.)

INORGANIC RESULTS FOR DETECTED ELEMENTS IN SOILS
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(mg/kg)

Elements	Date Collected:	City of Seattle						
		BH-1 05/04/88	BH-2 05/05/88	BH-3 05/04/88	BH-4 05/04/88	SO-6 06/00/87	SO-7 06/00/87	SO-8 06/00/87
Aluminum		8,810	9,310	8,830	8,530	+	+	+
Antimony		10.2 U	10.2 U	10.2 U	12.0	-	-	-
Arsenic		1.5 J	2.6	1.5 J	1.7 J	18.9	20.4	23.9
Barium		38.2 J	40.3	36.0 J	38.9 J	+	+	+
Beryllium		0.65U	0.65U	0.65U	0.64U	-	-	-
Cadmium		1.1 U	1.1 U	1.1 U	1.1 U	0.4	0.3	1.5
Calcium		3,490	3,590	3,350	4,340	+	+	+
Chromium		22.2	25.1	55.6	29.2	21.1	15.9	18.7
Cobalt		4.8 J	5.2 J	5.5 J	5.9 J	+	+	+
Copper		10.2	12.2	10.5	8.3	164	22.1	22.7
Iron		14,400	15,000	14,000	13,900	+	+	+
Lead		1.5	3.1	1.4	2.0	13.3	17.1	45.9
Magnesium		3,500	4,280	4,560	3,620	+	+	+
Manganese		230	231	234	258	+	+	+
Mercury		0.09U	0.09	0.08U	0.09U	-	-	-
Nickel		19.0	25.0	30.9	22.8	25.0 J	20.5 J	21.4 J
Potassium		475 J	510 J	284 J	514 J	+	+	+
Silver		21.6 U	10.9 U	21.6 U	21.5 U	-	-	-
Sodium		315 U	318 U	315 U	314	+	+	+
Thallium		1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	-	-	-
Vanadium		37.5	37.7	37.1	36.9	+	+	+
Zinc		23.0	27.8	23.2	22.0	128	142	161

U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).

UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.

+

- Not detected.

TABLE 10

ORGANIC RESULTS FOR DETECTED
VOCs, SEMIVOLATILE COMPOUNDS, AND PESTICIDES IN SOIL
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(ug/kg)

Compounds	Date Collected:	SS-1		SS-2		SS-3		SS-4 (b) (6)		SS-5		SS-6 South Side		SS-7		BH-5 Former	
		Background 04/11/88		N. Ditch 04/11/88		S. Ditch 04/11/88		Yard 04/11/88		NE Corner 04/11/88		Boundary 04/11/88		SE Corner 04/11/88		Impoundment 05/03/88	
<u>VOCs</u>																	
Methylene Chloride		15	J	21	J	40	J	9	J	26	J	17	J	18	J	6	U
Acetone		15	J	18	J	49	J	18	J	12	UJ	10	J	25	J	15	J
Trichloroethene		6	UJ	6	UJ	4	J	6	UJ	6	UJ	5	UJ	5	UJ	6	U
Trichlorofluoromethane (TIC)		-		-		9	J	-		-		-		-		-	
Tetrachloroethene		6	UJ	6	UJ	6	UJ	6	UJ	6	UJ	5	UJ	5	UJ	2	J
1,1,1-Trichloroethane		6	UJ	6	UJ	6	UJ	6	UJ	6	UJ	5	UJ	5	UJ	6	U
4-Methyl-2-pentanone (MIBK)		11	UJ	11	UJ	13	UJ	11	UJ	12	UJ	11	UJ	11	UJ	12	U
Benzene		6	UJ	6	UJ	6	UJ	6	UJ	6	UJ	5	UJ	5	UJ	6	U
Chlorobenzene		6	UJ	6	UJ	6	UJ	6	UJ	6	UJ	5	UJ	5	UJ	6	U
2-Butanone		11	UJ	11	UJ	13	UJ	11	UJ	12	UJ	11	UJ	11	UJ	11	UJ
<u>Semivolatiles</u>																	
Carboxylic Acid (TIC)		-		370	J	-		-		-		-		-		-	
Sulfur (TIC) (M01)		-		-		-		-		-		-		-		-	
Di-n-Octylphthalate		370	U	740	U	2,100	U	760	U	390	U	690	U	730	U	470	UJ
Pentachlorophenol		1,900	U	3,700	U	10,000	U	3,800	U	2,000	U	3,500	U	3,600	U	2,400	UJ
Phenanthrene		370	U	740	U	2,100	U	760	U	390	U	690	U	730	U	470	UJ
Anthracene		370	U	740	U	2,100	U	760	U	390	U	690	U	730	U	470	UJ
Di-n-Butylphthalate		370	U	740	U	2,100	U	760	U	390	U	690	U	730	U	2,100	UJ
Fluoranthene		370	U	740	U	2,100	U	760	U	390	U	690	U	730	U	470	UJ
Pyrene		370	U	740	U	2,100	U	760	U	390	U	690	U	730	U	470	UJ
Benzo(a)Anthracene		370	U	740	U	2,100	U	760	U	390	U	690	U	730	U	470	UJ
Bis(2-Ethylhexyl)phthalate		370	U	590	UJ	2,100	U	760	U	440	UJ	690	U	730	U	100	UJ
Chrysene		370	U	740	U	2,100	U	760	U	390	U	690	U	730	U	470	UJ
Benzo(a)fluoranthenes (total)		370	U	740	U	2,100	U	760	U	390	U	690	U	730	U	470	UJ
Benzo(a)Pyrene		370	U	740	U	2,100	U	769	U	390	U	690	U	730	U	470	UJ
5-Ethyl-2,2-Dimethyl- 1,3-Dioxane (TIC)		-		-		-		-		1,300	J	-		-		-	
<u>Pesticides</u>																	
4,4-DDE		18	U	18	U	20	U	19		19	U	17	U	17	U	++	

U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).

UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.

+ - Element not tested for.

++ - Pesticide data for this sample was rejected.

- - Not detected.

TABLE 10 (CONT.)

ORGANIC RESULTS FOR DETECTED
VOCs, SEMIVOLATILE COMPOUNDS, AND PESTICIDES IN SOIL
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(ug/kg)

Compounds	Date Collected:	City of Seattle							
		BH-1 05/04/88	BH-2 05/04/88	BH-3 05/04/88	BH-4 05/04/88	SO-6 06/00/87	SO-7 06/00/87	SO-8 06/00/87	
<u>VOCs</u>									
Methylene Chloride		5 UJ	5 U	13 UJ	6 UJ	-	-	-	
Acetone		190 J	47 J	370 J	21 UJ	TR	TR	TR	
Trichloroethene		5 U	5 U	13 UJ	6 UJ	-	-	-	
Trichlorofluoromethane (TIC)		-	-	-	-	+	+	+	
Tetrachloroethene		5 UJ	5 U	13 UJ	6 UJ	-	90	90	
1,1,1-Trichloroethane		1 J	1 J	13 UJ	6 UJ	-	-	-	
4-Methyl-2-pentanone (MIBK)		8 J	11 U	26 UJ	12 UJ	-	-	-	
Benzene		5 UJ	5 U	13 UJ	6 UJ	-	90	-	
Chlorobenzene		5 UJ	5 U	13 UJ	6 UJ	200	300	900	
2-Butanone (MEK)		150 J	25 UJ	29 UJ	7 UJ	-	-	-	
<u>Semivolatiles</u>									
Carboxylic Acid (TIC)		-	-	-	-	+	+	+	
Sulfur (M01) (TIC)		400 J	2,000 J	600 J	-	+	+	+	
Di-N-Octylphthalate		54 J	360 UJ	360 UJ	360 UJ	400	-	-	
Pentachlorophenol		1,800 UJ	1,800 UJ	1,800 UJ	1,800 UJ	-	-	1,200	
Phenanthrene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	TR	
Anthracene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	TR	
Di-N-Butylphthalate		2,000 UJ	1,600 UJ	1,800 UJ	1,800 UJ	500	300	TR	
Fluoranthene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	260	
Pyrene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	TR	
Benzo(a)Anthracene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	TR	
Bis(2-Ethylhexyl)phthalate		97 UJ	110 UJ	97 UJ	87 UJ	400	400	TR	
Chrysene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	250	
Benzo(a)fluoranthenes (total)		360 UJ	360 UJ	360 UJ	360 UJ	-	-	350	
Benzo(a)Pyrene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	200	
5-Ethyl-2,2-Dimethyl- 1,3-Dioxane (TIC)		-	-	-	-	+	+	+	
<u>Pesticides</u>									
4,4-DDE		++	++	++	++	-	-	-	

U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).

TR - Trace, quantity less than minimum quantifiable limits.

UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.

+ - Element not tested for.

++ - Pesticide data for this sample was rejected.

- - Not detected.

15.0 SUMMARY AND CONCLUSIONS

The sampling conducted during this investigation revealed significantly higher than background levels of lead and copper in soil from the south drainage ditch (SS-3) at the WTI Site. The lead may have originated from leaded gasoline used on site. The source of the copper is unknown. Acetone was detected at greater than 20 times the background level in BH-3 and greater than 10 times background in BH-1. The origin of this solvent may be the result of an on site activity. No other inorganic elements or organic compounds were detected in significant quantity in any soil or water sample.

As a result of the E&E FIT inspection at the WTI site, the following conclusions are presented:

- o No impact to ground water from the Widing Transportation truck rinse operation is evident.
- o Sufficient evidence was not found to indicate that rinsate lagoon contaminants migrated laterally into nearby on- or off-site soils.
- o Evidence of allegedly buried sludge was not found at the locations sampled.
- o Evidence of residual contamination from the alleged dumping of chemicals at the southwest corner of the site was not found.
- o The south drainage ditch on site may contain concentrations of lead and copper which are potentially hazardous to humans or the environment.
- o No evidence of pesticide contamination was found on site.

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APPENDIX A

SITE INSPECTION REPORT FORM
(EPA FORM 2070-13)

FOR
WIDING TRANSPORTATION, INC.

EPA SITE INSPECTION FORM 2070-13
FOR
WIDING TRANSPORTATION, INC.
SEATTLE, WASHINGTON

Date of Inspection: July 13, 1987

TDD Number: F10-8706-08

FIT Investigators: Gloria Skinner
Lynn Guilford

Report Prepared by: Gloria Skinner

Report Date: July 29, 1988

Submitted to: John Osborn, RPO
Field Operations and Technical Support Branch
U.S. Environmental Protection Agency
Region X
Seattle, WA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT						I. IDENTIFICATION	
PART 1 - SITE LOCATION AND INSPECTION INFORMATION						01 STATE WA	02 SITE NUMBER D067156489
II. SITE NAME AND LOCATION							
01 SITE NAME (Legal, common, or descriptive name of site) Widing Transportation, Inc.				02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 24300 Pacific Highway South			
03 CITY Kent		04 STATE WA	05 ZIP CODE 98031	06 COUNTY King		07 COUNTY CODE 033	08 CONG DIST 07
09 COORDINATES LATITUDE 47° 23' 06.0"		10 TYPE OF OWNERSHIP (Check one) <div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL </div> <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> F. OTHER <input type="checkbox"/> G. UNKNOWN </div>					
III. INSPECTION INFORMATION							
01 DATE OF INSPECTION 07/13/87 MO/DAY/YR		02 SITE STATUS <input type="checkbox"/> ACTIVE <input checked="" type="checkbox"/> INACTIVE		03 YEARS OF OPERATION 1966 1986 UNKNOWN BEGINNING YEAR ENDING YEAR			
04 AGENCY PERFORMING INSPECTION (Check all that apply) <input checked="" type="checkbox"/> A. EPA <input checked="" type="checkbox"/> B. EPA CONTRACTOR Ecology & Environment, Inc. (E&E) <input type="checkbox"/> C. MUNICIPAL <input type="checkbox"/> D. MUNICIPAL CONTRACTOR <div style="text-align: center;">(Name of firm)</div> <input type="checkbox"/> E. STATE <input type="checkbox"/> F. STATE CONTRACTOR <input type="checkbox"/> G. OTHER <div style="display: flex; justify-content: space-between;"> <div>(Name of firm)</div> <div>(Specify)</div> </div>							
05 CHIEF INSPECTOR Gloria Skinner		06 TITLE Field Investigator		07 ORGANIZATION E&E, Inc. FIT		08 TELEPHONE NO. 206/624-9537	
09 OTHER INSPECTORS Lynn Guilford		10 TITLE Field Investigator		11 ORGANIZATION E&E, Inc. FIT		12 TELEPHONE NO. 206/624-9537	
William Wright		Project Manager		Ecology		206/438-3058	
13 SITE REPRESENTATIVES INTERVIEWED Peter J. Pedone, Sr.		14 TITLE Environmental Regulatory Compliance Specialist		15 ADDRESS 2598 Madrona Point Lane Steilacoom, WA 98388		16 TELEPHONE NO. 206/581-4623	
Rodman Widing, Sr.		Widing Shareholder Representative		P.O. Box 3446 Kent, WA 98032		206/824-3708	
17 ACCESS GAINED BY (Check one) <input checked="" type="checkbox"/> PERMISSION <input type="checkbox"/> WARRANT		18 TIME OF INSPECTION 07/13/87; 1000		19 WEATHER CONDITIONS Dry and clear			
IV. INFORMATION AVAILABLE FROM							
01 CONTACT William Glasser		02 OF (Agency/Organization) USEPA				03 TELEPHONE NO. 206/442-7215	
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM Gloria Skinner		05 AGENCY E&E, Inc.	06 ORGANIZATION Seattle/FIT	07 TELEPHONE NO. 206/624-9537	08 DATE 07/21/88		

POTENTIAL HAZARDOUS WASTE SITE

SITE INSPECTION REPORT

I. IDENTIFICATION

01 STATE WA 02 SITE NUMBER D067156489

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 <input type="checkbox"/> A. GROUND WATER CONTAMINATION	02 <input type="checkbox"/> OBSERVED (DATE: _____) <input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	
01 <input checked="" type="checkbox"/> B. SURFACE WATER CONTAMINATION	02 <input checked="" type="checkbox"/> OBSERVED (DATE: 12/22/80) <input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0	04 NARRATIVE DESCRIPTION
Widing allowed rinsate pond water to discharge to a nearby swamp.	
01 <input checked="" type="checkbox"/> C. CONTAMINATION OF AIR	02 <input checked="" type="checkbox"/> OBSERVED (DATE: 10/10/79 and 12/80) <input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
03 POPULATION POTENTIALLY AFFECTED: > 10,000	04 NARRATIVE DESCRIPTION
Mixture of chemicals in rinsate ponds reacted to cause a release of noxious fumes to the atmosphere.	
01 <input type="checkbox"/> D. FIRE/EXPLOSIVE CONDITIONS	02 <input type="checkbox"/> OBSERVED (DATE: _____) <input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	
01 <input type="checkbox"/> E. DIRECT CONTACT	02 <input type="checkbox"/> OBSERVED (DATE: _____) <input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	
01 <input checked="" type="checkbox"/> F. CONTAMINATION OF SOIL	02 <input checked="" type="checkbox"/> OBSERVED (DATE: 6/86-5/88) <input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
03 AREA POTENTIALLY AFFECTED: 9.2	04 NARRATIVE DESCRIPTION
(Acres)	
Laboratory analysis prior to pond closure established presence of contamination in sludge and rinsate pond sediments. Contaminated material was excavated in 1986 (903 tons). Elevated levels of lead, copper, and acetone were found during 1988 site sampling at some locations.	
01 <input type="checkbox"/> G. DRINKING WATER CONTAMINATION	02 <input type="checkbox"/> OBSERVED (DATE: _____) <input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	
01 <input type="checkbox"/> H. WORKER EXPOSURE/INJURY	02 <input type="checkbox"/> OBSERVED (DATE: _____) <input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	
01 <input type="checkbox"/> I. POPULATION EXPOSURE/INJURY	02 <input type="checkbox"/> OBSERVED (DATE: _____) <input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	

POTENTIAL HAZARDOUS WASTE SITE

EPA

SITE INSPECTION REPORT

I. IDENTIFICATION

01 STATE WA 02 SITE NUMBER D067156489

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

II. HAZARDOUS CONDITIONS AND INCIDENTS (CONTINUED)

01 J. DAMAGE TO FLORA 02 OBSERVED (DATE:) POTENTIAL ALLEGED

04 NARRATIVE DESCRIPTION

None reported, observed, or suspected.

01 K. DAMAGE TO FAUNA 02 OBSERVED (DATE:) POTENTIAL ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

None reported, observed, or suspected.

01 L. CONTAMINATION OF FOOD CHAIN 02 OBSERVED (DATE:) POTENTIAL ALLEGED

04 NARRATIVE DESCRIPTION

None reported, observed, or suspected.

01 X M. UNSTABLE CONTAINMENT OF WASTES 02 X OBSERVED (DATE: 9/79) POTENTIAL ALLEGED

(Spills/runoff/standing liquids/leaking drums)

03 POPULATION POTENTIALLY AFFECTED: ~ 30 04 NARRATIVE DESCRIPTION

Rinsate ponds overflowed. Also alleged dumping of liquids on site surface and burial of sludge on site. Ponds were unlined. Contaminants potentially remaining in site soils may pose a potential hazard to on-site workers.

01 X N. DAMAGE TO OFFSITE PROPERTY 02 OBSERVED (DATE:) POTENTIAL X ALLEGED

04 NARRATIVE DESCRIPTION

Neighbors to south and east allege dumping of chemicals on adjacent property and uncontrolled runoff from the site while the truck rinse facility was operational.

01 X O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 OBSERVED (DATE:) X POTENTIAL ALLEGED

04 NARRATIVE DESCRIPTION

Runoff from site and material spilled in drainage ditches was carried to storm drains on Pacific Highway south. Liquid from Midway site was discharged to the METRO sewer system at another Kent site owned by Widing.

01 X P. ILLEGAL/UNAUTHORIZED DUMPING 02 X OBSERVED (DATE: 5/72) POTENTIAL ALLEGED

04 NARRATIVE DESCRIPTION

Burial of sludge wastes on site has been alleged. Accused of dumping phenolic resin in Aberdeen, Washington by Ecology in 1972. See also Paragraph "N" above.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Underground oil and gasoline tanks (believed to be in use at this time).

III. TOTAL POPULATION POTENTIALLY AFFECTED: > 10,000

IV. COMMENTS

Truck rinse operation ceased in late 1984. Site of rinsate ponds excavated and filled with clean fill material in 1986. Sludge and contaminated material removed to Arlington, Oregon.

V. SOURCES OF INFORMATION (Cite specific references. e.g., state files, sample analysis, reports)

1. Washington State Department of Ecology Site File.
2. Puget Sound Air Pollution Control Agency (PSAPCA) Site File.

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 4 - PERMIT AND DESCRIPTIVE INFORMATION				I. IDENTIFICATION	
EPA		01 STATE WA		02 SITE NUMBER D067156489	
II. PERMIT INFORMATION					
01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS	
<input type="checkbox"/> A. NPDES					
<input type="checkbox"/> B. UIC					
<input type="checkbox"/> C. AIR					
<input type="checkbox"/> D. RCRA					
<input type="checkbox"/> E. RCRA INTERIM STATUS					
<input type="checkbox"/> F. SPCC PLAN					
<input checked="" type="checkbox"/> G. LOCAL (Specify) Metro Sewer System	7501	06/04/85	?	Metro Discharge Permit	
<input checked="" type="checkbox"/> H. LOCAL (Specify) City of Kent	72	11/07/67	05/07/68	City of Kent Conditional Exception Permit (land use)	
<input checked="" type="checkbox"/> I. OTHER (Specify) ICC	CC-567	prior to 1970	---	Interstate Commerce Commission Operating Authority Permit	
<input checked="" type="checkbox"/> J. NONE City of Kent	---	1980	---	City of Kent approved ponds without a permit	
III. SITE DESCRIPTION					
01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 Other	
<input checked="" type="checkbox"/> A. SURFACE IMPOUNDMENT	> 325,000	gallons	<input type="checkbox"/> A. INCINERATION	<input checked="" type="checkbox"/> A. BUILDINGS ON SITE 5	
<input checked="" type="checkbox"/> B. PILES	> 250	cubic yards	<input type="checkbox"/> B. UNDERGROUND INJECTION		
<input type="checkbox"/> C. DRUMS, ABOVE GROUND	Capacity unknown	gallons	<input type="checkbox"/> C. CHEMICAL/PHYSICAL	06 AREA OF SITE 9.3 (Acres)	
<input checked="" type="checkbox"/> D. TANK, ABOVE GROUND			<input type="checkbox"/> D. BIOLOGICAL		
<input type="checkbox"/> E. TANK, BELOW GROUND			<input type="checkbox"/> E. WASTE OIL PROCESSING		
<input type="checkbox"/> F. LANDFILL			<input type="checkbox"/> F. SOLVENT RECOVERY		
<input type="checkbox"/> G. LANDFARM			<input type="checkbox"/> G. OTHER RECYCLING/RECOVERY		
<input type="checkbox"/> H. OPEN DUMP			<input checked="" type="checkbox"/> H. OTHER Rinsate Filtering (Specify)		
<input type="checkbox"/> I. OTHER (Specify)					
07 COMMENTS Over 903 tons of contaminated soil and sludge was removed from the site in 1986. E&E 1988 inspection detected elevated levels of lead and copper in the south ditch location and acetone in a soil boring sample.					
IV. CONTAINMENT					
01 CONTAINMENT OF WASTES (Check one) <input type="checkbox"/> A. ADEQUATE, SECURE <input type="checkbox"/> B. MODERATE <input type="checkbox"/> C. INADEQUATE, POOR <input checked="" type="checkbox"/> D. INSECURE, UNSOUND, DANGEROUS					
02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC. Prior to 1986, three rinsate ponds (two unlined and one concrete lined) contained chemical tank truck rinsate. Sludge dredged from the ponds was disposed on the site surface. Ponds were allowed to overflow at times.					
V. ACCESSIBILITY					
01 WASTE EASILY ACCESSIBLE: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
02 COMMENTS Site is fenced. Access was restricted when truck rinse was operational. Waste is no longer present on site as sludge or liquid, although areas of contaminated soil may exist.					
VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)					
1. City of Kent Files. 2. Ecology Site File. 3. Widing Transportation, Inc.					

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT						I. IDENTIFICATION	
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA						01 STATE WA	02 SITE NUMBER D067156489
II. DRINKING WATER SUPPLY							
01 TYPE OF DRINKING SUPPLY (Check as applicable)			02 STATUS			03 DISTANCE TO SITE	
<div style="display: flex; justify-content: space-between;"> SURFACE WELL </div> <div style="display: flex; justify-content: space-between;"> COMMUNITY A. <u> </u> B. <u>X</u> </div> <div style="display: flex; justify-content: space-between;"> NON-COMMUNITY C. <u> </u> D. <u>X</u> </div>			<div style="display: flex; justify-content: space-between;"> ENDANGERED AFFECTED MONITORED </div> <div style="display: flex; justify-content: space-between;"> A. <u> </u> B. <u> </u> C. <u> </u> </div> <div style="display: flex; justify-content: space-between;"> D. <u> </u> E. <u> </u> F. <u> </u> </div>			<div style="display: flex; justify-content: space-between;"> A. <u>1.9</u> (mi) </div> <div style="display: flex; justify-content: space-between;"> B. <u>0.7</u> (mi) </div>	
III. GROUND WATER							
01 GROUND WATER USE IN VICINITY (Check one)							
<div style="display: flex; justify-content: space-between;"> <u> </u> A. ONLY SOURCE FOR DRINKING <u>X</u> B. DRINKING (Other sources available) <u> </u> C. COMMERCIAL, INDUSTRIAL IRRIGATION (Limited other sources available) <u> </u> D. NOT USED, UNUSABLE </div> <div style="text-align: center; margin-top: 5px;"> COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) </div>							
02 POPULATION SERVED BY GROUND WATER <u>> 56,000</u>				03 DISTANCE TO NEAREST DRINKING WATER WELL <u>0.7</u> (mi)			
04 DEPTH TO GROUND WATER <u>57</u> (ft)		05 DIRECTION OF GROUND WATER FLOW <u>North to South</u>		06 DEPTH TO AQUIFER OF CONCERN <u>~ 100</u> (ft)		07 POTENTIAL YIELD OF AQUIFER <u>470</u> (gpd) gallons per min.	
						08 SOLE SOURCE AQUIFER <u> </u> YES <u>X</u> NO	
09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)							
Closest known private well: C.E. Kraft, 4436 Reith Road, domestic use, 160 feet deep. Closest municipal wells: Water District #54 (Des Moines) approximately 1.9 miles from site, two wells: <ol style="list-style-type: none"> 1. 328 feet deep, 16 inches in diameter, 470 gallons per minute. 2. 244 feet deep, 12 inches in diameter, 500 gallons per minute. 							
10 RECHARGE AREA				11 DISCHARGE AREA			
<div style="display: flex;"> <div style="flex: 1;"> <u>X</u> YES <u> </u> NO </div> <div style="flex: 2;"> COMMENTS Recharge focal point believed to be beneath Midway Landfill, approximately 1/4 mile south of site. </div> </div>				<div style="display: flex;"> <div style="flex: 1;"> <u> </u> YES <u> </u> NO </div> <div style="flex: 2;"> COMMENTS </div> </div>			
IV. SURFACE WATER							
01 SURFACE WATER USE (Check one)							
<div style="display: flex; justify-content: space-between;"> <u>X</u> A. RECREATION AND BEAUTIFICATION <u> </u> B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES <u> </u> C. COMMERCIAL, INDUSTRIAL <u> </u> D. NOT CURRENTLY USED </div>							
02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER							
NAME:		AFFECTED		DISTANCE TO SITE			
<u>Pond on property northeast of site</u>		<u> </u>		<u>0.15</u> (mi)			
<u>Parkside Wetland</u>		<u> </u>		<u>0.4</u> (mi)			
<u>North Fork of Smith River</u>		<u> </u>		<u>0.85</u> (mi)			
V. DEMOGRAPHIC AND PROPERTY INFORMATION							
01 TOTAL POPULATION WITHIN						02 DISTANCE TO NEAREST POPULATION	
<div style="display: flex; justify-content: space-between;"> <div> ONE (1) MILE OF SITE A. <u>10,816</u> NO. OF PERSONS </div> <div> TWO (2) MILES OF SITE B. <u>30,618</u> NO. OF PERSONS </div> <div> THREE (3) MILES OF SITE C. <u>~ 56,000</u> NO. OF PERSONS </div> </div>						<u>~ 50</u> (ft)	
03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE <u>> 10,000</u>				04 DISTANCE TO NEAREST OFF-SITE BUILDING <u>~ 50</u> (ft)			
05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)							
Pockets of densely populated urban areas are dispersed among areas of heavy commercial use and areas of undeveloped land. Of the approximate 56,000 people within three miles, nearly 14,000 are in the city limits of Kent.							

POTENTIAL HAZARDOUS WASTE SITE		I. IDENTIFICATION	
SITE INSPECTION REPORT		01 STATE WA	02 SITE NUMBER D067156489
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA			
II. ENVIRONMENTAL INFORMATION			
01 PERMEABILITY OF UNSATURATED ZONE (Check one)			
<input type="checkbox"/> A. $10^{-6} - 10^{-8}$ cm/sec <input checked="" type="checkbox"/> B. $10^{-4} - 10^{-6}$ cm/sec <input type="checkbox"/> C. $10^{-4} - 10^{-3}$ cm/sec <input type="checkbox"/> D. GREATER THAN 10^{-3} cm/sec			
02 PERMEABILITY OF BEDROCK (Check one) - N/A			
<input type="checkbox"/> A. IMPERMEABLE (Less than 10^{-6} cm/sec) <input type="checkbox"/> B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) <input type="checkbox"/> C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) <input type="checkbox"/> D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)			
03 DEPTH TO BEDROCK Unknown (ft)	04 DEPTH OF CONTAMINATED SOIL ZONE Unknown (ft)	05 SOIL pH Unknown (1)	
06 NET PRECIPITATION 17.24 (in)	07 ONE-YEAR 24-HOUR RAINFALL ~ 3.0 (in)	08 SLOPE SITE SLOPE 0 - 3 %	DIRECTION OF SITE SLOPE East and South TERRAIN AVERAGE SLOPE 3 %
09 FLOOD POTENTIAL SITE IS IN N/A YEAR FLOOD PLAN		10 SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY	
11 DISTANCE TO WETLANDS (5-acre minimum)		12 DISTANCE TO CRITICAL HABITAT (of endangered species)	
ESTUARINE OTHER A. (mi) B. 0.4 (mi)		> 3 (mi) ENDANGERED SPECIES:	
13 LAND USE IN VICINITY			
DISTANCE TO:			
COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	PRIME AGRICULTURAL LAND	AG LAND
A. < 1/4 (mi)	B. < 1/4 (mi)	C. > 3 (mi)	D. > 3 (mi)
4 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY			
<p>The site is nearly level, but is built up above surrounding land, most noticeably on the south and east where there is an approximate drop of six feet at the site boundary. West of the site, across Pacific Highway South, the land surface drops off sharply approximately 100 feet to the Parkside Wetland. There is a gentle slope to the south towards Midway Landfill, approximately 1/4 mile south of the site. Salt Water State Park boundaries are within one mile of the site to the southwest. The nearest residential area is a mobile home park of approximately 40 units between the site and Midway Landfill.</p>			
VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)			
1. City of Seattle Midway Landfill Study. 2. USGS 7.5' Des Moines Quadrangle. 3. Climatic Atlas of the United States, U.S. Department of Commerce, 1979. 4. U.S. 1980 Census of the Population.			

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 6 - SAMPLE AND FIELD INFORMATION		I. IDENTIFICATION	
EPA		01 STATE WA	02 SITE NUMBER D067156489
II. SAMPLES TAKEN			
SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUND WATER	2	Keystone Environmental, Data Chem	06/29/88
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	12	Wilson Labs, Ecova, Spectrix, Data Chem	06/29/88
VEGETATION			
OTHER - Blank	1	Keystone Environmental, Data Chem	06/29/88
III. FIELD MEASUREMENTS TAKEN			
01 TYPE HNU	02 COMMENTS In use during soil sampling		
IV. PHOTOGRAPHS AND MAPS			
01 TYPE <input checked="" type="checkbox"/> GROUND <input checked="" type="checkbox"/> AERIAL		02 IN CUSTODY OF <u>Ecology and Environment, Inc.</u> (Name of organization or individual)	
03 MAPS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	04 LOCATION OF MAPS <u>Ecology and Environment, Inc.</u>		
V. OTHER FIELD DATA COLLECTED (Provide narrative description)			
<p>Two ground water samples, five composite soil boring samples, six surface soil grab samples, and a background surface soil grab sample were collected in 1988 and analyzed for the full range of EPA TCL compounds, including inorganics, volatile organic compounds, semivolatile organic compounds, and pesticides. Elevated levels of lead and copper were detected in a surface soil sample, an elevated acetone concentration was detected in one soil boring sample. No pesticides were detected in site samples. No impact to ground water from the truck rinse operation was detected. Sufficient evidence was not found to indicate that rinsate pond contaminants migrated laterally into nearby soils.</p>			
VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)			
<ol style="list-style-type: none"> 1. Sample Data Package. 2. E&E Site Inspection Records. 			

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 7 - OWNER INFORMATION						I. IDENTIFICATION	
EPA						01 STATE WA	02 SITE NUMBER D067156489
II. CURRENT OWNER(S)						PARENT COMPANY (If applicable)	
01 NAME Widing Transportation Shareholders c/o Rodman Widing, Sr.			02 D+B NUMBER		08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.) P.O. Box 3446			04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY Kent		06 STATE WA	07 ZIP CODE 98032		12 CITY		13 STATE 14 ZIP CODE
01 NAME			02 D+B NUMBER		08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)			04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE 14 ZIP CODE
01 NAME			02 D+B NUMBER		08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)			04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE 14 ZIP CODE
01 NAME			02 D+B NUMBER		08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)			04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE 14 ZIP CODE
III. PREVIOUS OWNER(S) (List most recent first)						IV. REALTY OWNER(S) (If applicable; list most recent first)	
01 NAME			02 D+B NUMBER		01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		05 CITY		06 STATE 07 ZIP CODE
01 NAME			02 D+B NUMBER		01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		05 CITY		06 STATE 07 ZIP CODE
01 NAME			02 D+B NUMBER		01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		05 CITY		06 STATE 07 ZIP CODE
01 NAME			02 D+B NUMBER		01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		05 CITY		06 STATE 07 ZIP CODE
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)							
1. E&E Site Investigation.							

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 8 - OPERATOR INFORMATION		I. IDENTIFICATION 01 STATE WA 02 SITE NUMBER D067156489	
EPA			
II. CURRENT OPERATOR (Provide if different from owner)		OPERATOR'S PARENT COMPANY (If applicable)	
01 NAME None	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)	04 SIC CODE	12 STREET ADDRESS (P.O. BOX, RFD #, ETC.)	13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER		
III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)		PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)	
01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD		
01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD		
01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD		
IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)			

POTENTIAL HAZARDOUS WASTE SITE		I. IDENTIFICATION	
EPA		SITE INSPECTION REPORT	
PART 9 - GENERATOR/TRANSPORTER INFORMATION		01 STATE WA	02 SITE NUMBER D067156489
II. ON-SITE GENERATOR			
01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	
III. OFF-SITE GENERATOR(S)			
01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	
01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	
01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	
IV. TRANSPORTER(S)			
01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	
01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)			

**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES**

EPA

I. IDENTIFICATION

01 STATE WA	02 SITE NUMBER D067156489
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II. PAST RESPONSE ACTIVITIES

01 <input type="checkbox"/> A. WATER SUPPLY CLOSED	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> B. TEMPORARY WATER SUPPLY PROVIDED	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> C. PERMANENT WATER SUPPLY PROVIDED	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> D. SPILLED MATERIAL REMOVED	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input checked="" type="checkbox"/> E. CONTAMINATED SOIL REMOVED	02 DATE <u>12/86</u>	03 AGENCY <u>Ecology</u>
04 DESCRIPTION Three rinsate ponds excavated, > 900 tons of contaminated material and soil disposed of at Arlington, Oregon.		
01 <input type="checkbox"/> F. WASTE REPACKAGED	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> G. WASTE DISPOSED ELSEWHERE	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> H. ON SITE BURIAL	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> I. IN SITU CHEMICAL TREATMENT	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> J. IN SITU BIOLOGICAL TREATMENT	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> K. IN SITU PHYSICAL TREATMENT	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> L. ENCAPSULATION	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> M. EMERGENCY WASTE TREATMENT	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> N. CUTOFF WALLS	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> O. EMERGENCY DIKING/SURFACE WATER DIVERSION	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> P. CUTOFF TRENCHES/SUMP	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		
01 <input type="checkbox"/> Q. SUBSURFACE CUTOFF WALL	02 DATE _____	03 AGENCY _____
04 DESCRIPTION _____		

EPA		POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES		I. IDENTIFICATION	
		01 STATE WA	02 SITE NUMBER D067156489		
II. PAST RESPONSE ACTIVITIES (Continued)					
01	R. BARRIER WALLS CONSTRUCTED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	S. CAPPING/COVERING	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	T. BULK TANKAGE REPAIRED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	U. GROUT CURTAIN CONSTRUCTED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	V. BOTTOM SEALED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	W. GAS CONTROL	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	X. FIRE CONTROL	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	Y. LEACHATE TREATMENT	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	Z. AREA EVACUATED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	1. ACCESS TO SITE RESTRICTED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	2. POPULATION RELOCATED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	3. OTHER REMEDIAL ACTIVITIES	02 DATE		03 AGENCY	
04	DESCRIPTION				
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)					
1. Ecology Site File.					

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE WA	02 SITE NUMBER D067156489
----------------	------------------------------

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

Ecology, 12/16/73, oil spill at Boeing, \$250 fine.
03/16/76, oil spill at Time Oil, \$250 fine.
09/25/79, treatment system declared inadequate, fined for overflows and on-site waste disposal.
04/13/86, supervised closure of rinsate ponds and excavation/removal of > 900 tons of contaminated soil.

PSAPCA (Puget Sound Air Pollution Control Agency), 10/10/79, fined for uncontrolled air emissions.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

APPENDIX B

WELL LOGS FOR MW-1, MW-28, AND LOCAL SUPPLY WELLS

RECORD OF BOREHOLE MW-1

Figure A-1

LOCATION See Figure

DATUM 375 ft. (approx.)

DATE 3-25-85

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Air Rotary Drill

"SOIL PROFILE"			SAMPLES		ELEVATION	STANDARD PENETRATION TEST ▲ "N" BLOWS PER FOOT		GROUNDWATER WELL INSTALLATION	
ELEVN DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE		BLOWS/FT	WATER CONTENT, PERCENT		
							Wp		Wn
375 0.0	Dark brown; sandy, Fine to coarse GRAVEL, trace silt.		1	AR				<p>Precast concrete flush fitting vault</p> <p>Cement grout</p> <p>6" Steel locking casing</p> <p>4" Flush coupled, threaded PVC casing</p>	
370 5.0	Medium to dark brown; silty, fine to medium SAND, trace gravel.		2	AR					
						365			
			3	AR					
360 15.0	Medium to dark brown; Fine to coarse GRAVEL, to gravelly, fine to coarse SAND to sandy, Fine to coarse GRAVEL, trace silt.		4	AR		360			
						355			
			5	AR					
					350				
		6	AR						
345 30.0			7	AR		345			

REMARKS: AR - Air rotary drill

VERTICAL SCALE
1 IN. TO 5 FT.

Golder Associates

JOB # 853-1007

RECORD OF BOREHOLE MW-1

Figure A-1

LOCATION See Figure

DATUM 375 ft (approx.)

DATE 3-25-85

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Air Rotary Drill

SOIL PROFILE			SAMPLES			STANDARD PENETRATION TEST			GROUNDWATER WELL INSTALLATION	
ELEV DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS/FT	ELEVATION	▲ "N" BLOWS PER FOOT			
							WATER CONTENT, PERCENT			
							Wp	Wn	WL	
	Gray-brown to brown; Fine to coarse SAND, some gravel, trace silt.		7	AR		340				
			8	AR						
335 40.0	Gray-brown to brown; Fine to coarse SAND and Fine to coarse GRAVEL, some to trace silt.		9	AR		335				
			10	AR		330				
	50.0-55.0 : Grades to Fine to coarse SAND, some gravel, some silt.		11	AR		325				
			12	AR		320				
315 50.0	Gray-brown to brown; silty, Fine to coarse SAND, some gravel.		13	AR		315				
310 65.0			14	AR		310				

4" Flush
coupled,
threaded
PVC casing

Cement grout

Bentonite
seal

Pea gravel

REMARKS.

VERTICAL SCALE
1 IN TO 5 FT.

Golder Associates

JOB # 853-1007

RECORD OF BOREHOLE MW-1

Figure A-1


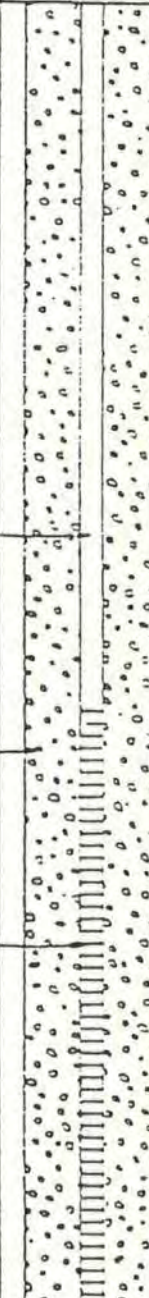
LOCATION See Figure

DATUM 375 Ft. (approx.)

DATE 3-25-85

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Air Rotary Drill

SOIL PROFILE			SAMPLES		ELEVATION	STANDARD PENETRATION TEST ▲ "N" BLOWS PER FOOT		GROUNDWATER WELL INSTALLATION	
ELEV/N DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE		BLOWS/FT.	WATER CONTENT, PERCENT		
							Wp		Wn
	Medium-brown; silty, Fine to coarse SAND and Fine to coarse GRAVEL.		14	AR	305				
			15	AR	300				
299			16	AR	295				
76.0	Gray-green to medium brown; fine to coarse GRAVEL and fine to coarse SAND, some to trace silt.		17	AR	290				
	85.0-115.0 Local lenses of silt.		18	AR	285				
			19	AR	280				
			20	AR	275				
			21	AR					

4" Flush
coupled,
threaded
PVC casing

Pea gravel

0.020 Slotted
4" PVC Screen

REMARKS.

VERTICAL SCALE
1 IN. TO 5 FT.

Golder Associates

JOB # 853-1007

RECORD OF BOREHOLE MW-1

Figure A-1

LOCATION See Figure

DATUM 375 Ft (approx.)

DATE 3-25-85

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Air Rotary Drill

SOIL PROFILE			SAMPLES			STANDARD PENETRATION TEST				GROUNDWATER WELL INSTALLATION	
ELEV DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS/FT	ELEVATION	▲ "N" BLOWS PER FOOT				
							WATER CONTENT, PERCENT				
							Wp	Wn	WL		
	Gray-green to medium brown; fine to coarse GRAVEL and fine to coarse SAND, some to trace silt.					270					
						265					
						260					
						255					
250						250					
240	Dark gray; CLAY, some silt, trace sand, trace gravel.					245					
126.0	End of Hole at 126.0 ft.										

0.020 Slotted
4" PVC screen

Pea gravel

Bentonite
seal

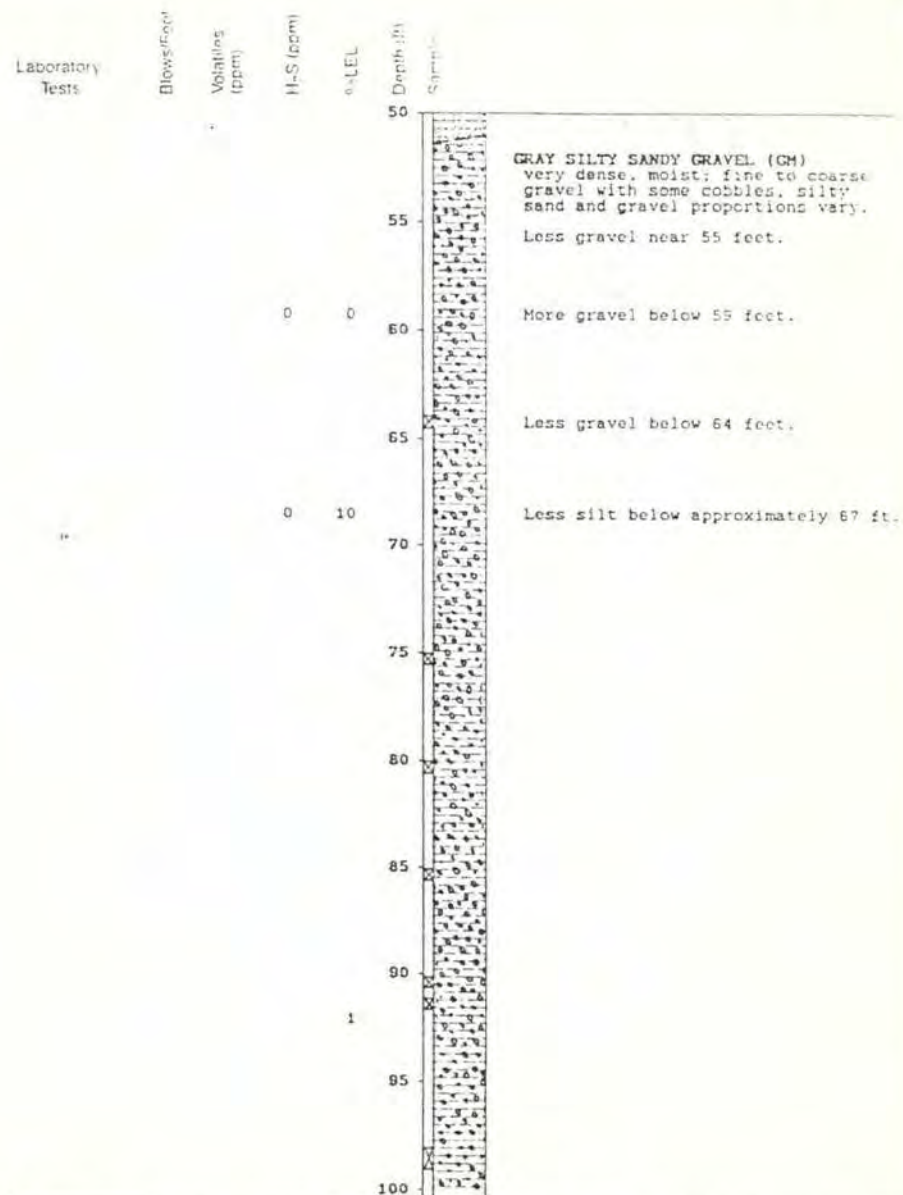
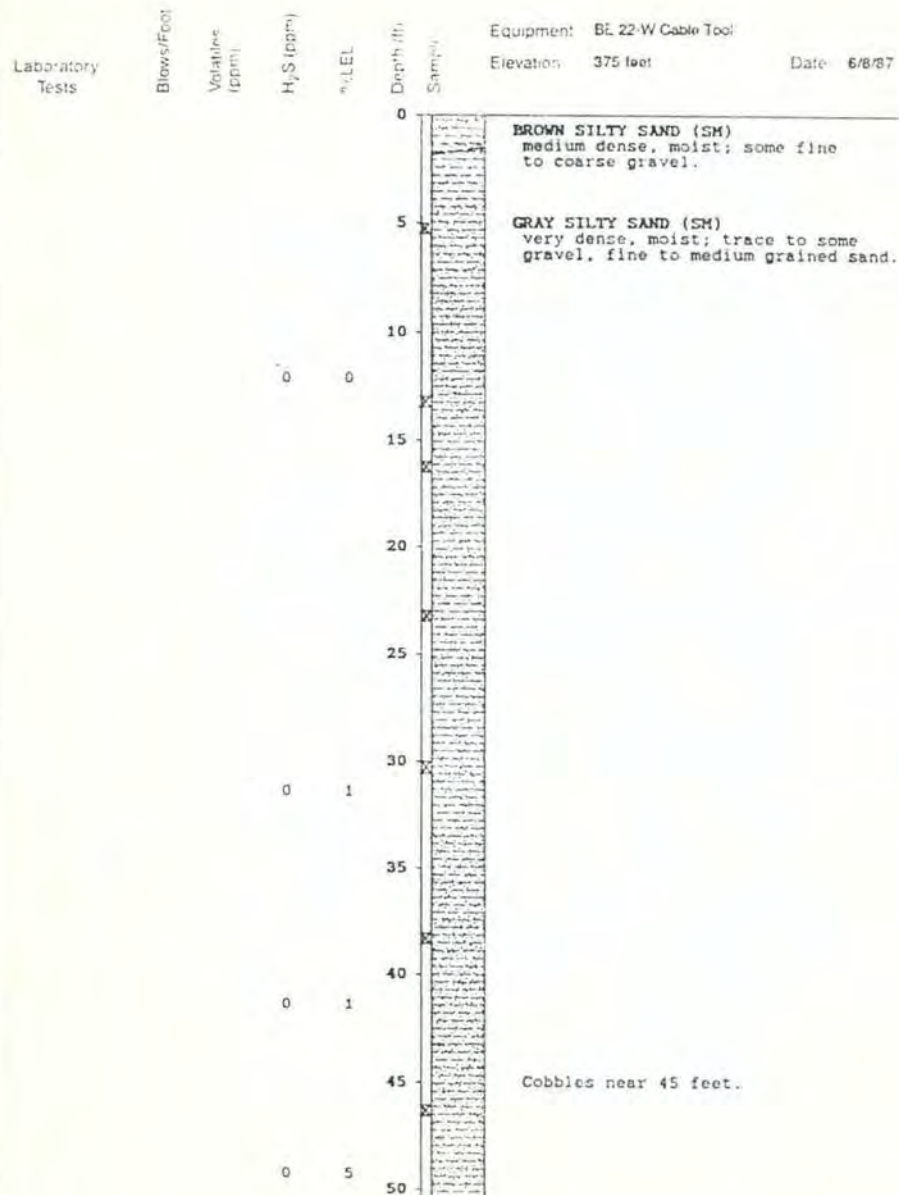
REMARKS:

VERTICAL SCALE

1 IN TO 5 FT.

Golder Associates

JOB # 853-1003



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Log of Boring MW-28

Midway Landfill
Kent, Washington

B50

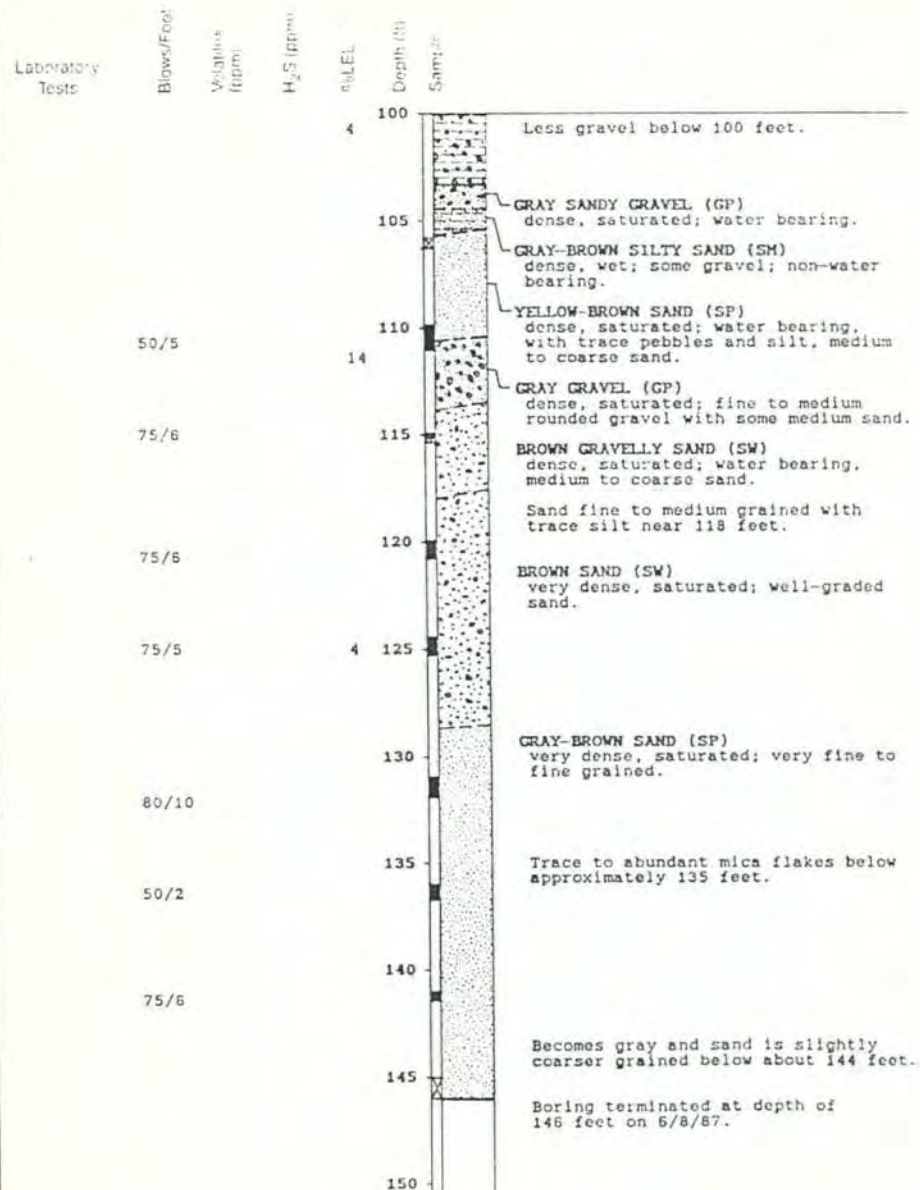
JOB NUMBER
14,169.102

DRILLS
PS/TG

DATE
15 October 87

REVISION

DATE



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Log of Boring MW-28

Midway Landfill
Kent, Washington

B50

JOB NUMBER
14,169,102

DRAWN BY
PS/TG

APPROVED

DATE
15 October 87

(1) OWNER: Name Thora J. Birkeland Address 4512 So. 200th, Kent, Wash. 9803

(2) LOCATION OF WELL: County King - SE $\frac{1}{4}$ Sec. 03 T. 27 N. R. 04 W.M.

Bearing and distance from section or subdivision corner

(3) **PROPOSED USE:** Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well
(if more than one).....

New well	<input checked="" type="checkbox"/>	Method: Dug	<input type="checkbox"/>	Bored	<input type="checkbox"/>
Deepened	<input type="checkbox"/>	Cable	<input checked="" type="checkbox"/>	Driven	<input type="checkbox"/>
Reconditioned	<input type="checkbox"/>	Rotary	<input type="checkbox"/>	Jetted	<input type="checkbox"/>

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 35 ft. Depth of completed well 35 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 35 ft.
Threaded ☐ " Diam. from _____ ft. to _____ ft.
Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used.....

SIZE of perforations in. by in.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

Screens: Yes ☐ No ☒

Manufacturer's Name.....

Type..... Model No.....

Diam. Slot size from ft. to ft.

Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft
Material used in seal Ben-ton-ite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name SEARS
Type: JET HP 1/2

(8) **WATER LEVELS:** Land-surface elevation above mean sea level... ft.
 Static level 14 ft. below top of well Date July 23
 Artesian pressure _____ lbs. per square inch Date _____
 Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs

12	13	14	15
16	17	18	19

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

[illegible]

Date of test

Bailer test 8 gal./min. with 11 ft. drawdown after 2 hrs

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation

MATERIAL	FROM	TO
OVER Barden	0	4'
glacial Till compact- grey	4'	20'
impervious material		
Macropore- grey	20'	34'
water bearing sandy gravel	34'	35'

Work started....., 19..... Completed....., 19.....

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME EVERGREEN Dealing
(Person, firm, or corporation) (Type or print)

Address 15407 42 Ave So Seattle

[Signed] Polank Finkler
(Well Driller)

License No. 223-02-3719 Date July 25, 1922

WATER WELL REPORT

STATE OF WASHINGTON

Application No

Permit No

(1) OWNER: Name John Green

Address 1718 So. 232nd Seattle, Wa. 98188

(2) LOCATION OF WELL: County King

NW 1/4 SE 1/4 Sec. 10 T 22 N. R 4E W 1/2

Bearing and distance from section or subdivision corner 216th & Frager Rd.

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

Class 4

(4) TYPE OF WORK: Owner's number of well (if more than one) 1
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches
Drilled 65 ft. Depth of completed well 65 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from 0 ft. to 65 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒

Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐

Manufacturer's Name Johnson Well
Type Stainless steel Model No.
Diam. 6 Slot size 10 from 55 ft. to 65 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name Red Jacket
Type 12GC H.P. 2

(8) WATER LEVELS: Land-surface elevation above mean sea level
Static level 20 ft. below top of well Date 12-13-85
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller
Yield: 33 gal./min. with 8'9" ft. drawdown after 4 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
------	-------------	------	-------------	------	-------------

Date of test 1-15-86

Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation

MATERIAL	FROM	TO
Top soil	0	2
Sand & clay	2	18
Sand & seepage	18	23
Dirty sand & wood	23	36
Sand & clay	36	42
Seepage, sand, wood & peat	42	46
Sand & clay	46	54
Water & dirty sand	54	62
Water, coarse & fine sand	62	65

RECEIVED
FEB 13 1987

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Work started 12-13 19 85 Completed 12-13 19 85

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Richardson Well Drilling Co.
(Person, firm, or corporation) (Type or print)

Address P.O. Box 44427 Tacoma, Wa. 98444

[Signed] (Well Driller)

License No. 0419 Date 2-11 19 86

Mehr

(USE ADDITIONAL SHEETS IF NECESSARY)

(1) OWNER: Name MES KING Address 21839 Frager Rd., Kent, VA 98031
(2) LOCATION OF WELL: County KING - SW 1/4 NE 1/4 Sec. 10 T. 22 N., R. 4 W.M.
Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well
(if more than one).....

New well	<input checked="" type="checkbox"/>	Method: Dug	<input type="checkbox"/>	Bored	<input type="checkbox"/>
Deepened	<input type="checkbox"/>	Cable	<input type="checkbox"/>	Driven	<input type="checkbox"/>
Reconditioned	<input type="checkbox"/>	Rotary	<input checked="" type="checkbox"/>	Jettied	<input type="checkbox"/>

(5) **DIMENSIONS:** Diameter of well 6 inches.
 Drilled 58 ft. Depth of completed well 58 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 Diam. from 0 ft. to 58 ft.
 Threaded ☐ " Diam. from _____ ft. to _____ ft.
 Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used.....

SIZE of perforations in. by in.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

Screens: Yes ☒ No ☐

Manufacturer's Name Johnson
Type stainless Model No. _____
Diam. 6 Slot size .020 from 53 ft. to 58 ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal bentonite & cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off.

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
topsoil, brown, dry	0	2
sand, brown fine, dry	2	15
sand, brown, med., wet	15	23
silty sand, blue, dry to wet	23	54
water bearing sand	54	60

Work started 2/10/83, 1983 Completed 2/10/83, 1983

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME NORTHWEST PUMP & DRILLING CO.
(Person, firm, or corporation) (Type or print)

Address 3245 Auburn Way South, Auburn, WA 98002

[Signed] R.B. DeRone
(Well Driller)

License No. 0097 Date 2/178/83

(7) PUMP: Manufacturer's Name.....
Type: HP.....

(8) **WATER LEVELS:** Land-surface elevation above mean sea level... ft.
 Static level 12 ft. below top of well Date. 2/10/83
 Artesian pressure _____ lbs. per square inch Date. _____
 Artesian water is controlled by _____ (Cap. valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes, by whom?.....

Yield: gal./min. with ft. drawdown after hrs.

11	11	11	11
11	11	11	11

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
.....
.....

Date of test

Bailer test 35 gal/min. with 9 ft. drawdown after 1 hrs

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

ECY 050-1-20

(1) OWNER: Name Investment Bldg. Development Co. Address 534 S. Smith, Kent, W. 98031
 (2) LOCATION OF WELL: County King Lot 56 - NE 1/4 SW 1/4 Sec 24 T. 2 N. R. 4E W.M.
 Bearing and distance from section or subdivision corner Course 1st E. then to Kent-Platt Bldg. Vol. 4, Page 29

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐
Heat pump Irrigation ☐ Test Well ☐ Other ☒

(4) TYPE OF WORK: Owner's number of well (if more than one) . . . 2

New well <input checked="" type="checkbox"/>	Method: Dug <input type="checkbox"/>	Bored <input type="checkbox"/>
Deepened <input type="checkbox"/>	Cable <input type="checkbox"/>	Driven <input type="checkbox"/>
Reconditioned <input type="checkbox"/>	Rotary <input checked="" type="checkbox"/>	Jetted <input type="checkbox"/>

(5) **DIMENSIONS:** Diameter of well 6 inches.
 Drilled 78 ft. Depth of completed well 78 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 68 ft.
 Threaded ☐ " Diam. from _____ ft. to _____ ft.
 Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used

SIZE of perforations in. by in.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

Screens: Yes ☒ No ☐
 Manufacturer's Name Johnson
 Type Stainless Steel Model No. _____
 Diam. 5 Slot size 15 from 6.8 ft. to 73 ft.
 Diam. 5 Slot size 20 from 73 ft. to 78 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal puddling clay
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Brown Top soil	0	12
Dark gray silty sand	12	40
Gray clay	40	70
Gray water sand & gravel	70	78

well #2

WELL DRILLER'S STATEMENT: 1981
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Johnson Drilling Co., Inc
(Person, firm, or corporation) (Type or print)

Address 19415 108th Ave SE Renton 980

[Signed] Bruce Johnson
(Well Driller)

License No. 0233 Date 6/19/1981

ECY 050-1-20

WATER WELL REPORT

STATE OF WASHINGTON

22/04-215
Application No. _____
Permit No. _____

(1) OWNER: Name Bill Sharick Address 10464 5th Ave. S., Seattle, WA
(2) LOCATION OF WELL: County King — NW 1/4 NE 1/4 Sec. 27 T. 22 N. R. 4 E W.M
Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 137 ft. Depth of completed well 137 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 137 ft.
Threaded ☐ " Diam. from _____ ft. to _____ ft.
Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☒
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 13 ft.
Material used in seal bentonite & cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P.

(8) WATER LEVELS: Land-surface elevation _____ ft.
above mean sea level. _____ ft.
Static level 79 ft. below top of well Date 5/3/79
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " " " "
" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test 20 gal./min. with 22 ft. drawdown after 1 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
brown sand & gravel	0	77
brown till	77	98
brown silty sand	98	113
brown till	113	134
water bearing sand & gravel	134	137

Work started 5/2/79, 19____ Completed 5/3/79, 19____

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Northwest Pump & Drilling Co.
(Person, firm, or corporation) (Type or print)

Address 3245 Auburn Way South, Auburn, WA

[Signed] R. B. DeKrom
(Well Driller)

License No. 0027 Date 5/4/79, 19____

ECY 050-1-20



WATER WELL REPORT

STATE OF WASHINGTON

Application No. 22/07-07K

Permit No.

(1) OWNER: Name John Fisher

Address 130 S.W. 154th, Seattle, WA

(2) LOCATION OF WELL: County King

SE 1/4 SE 1/4 Sec 27 T. 22 N. R. 4 W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 45 ft. Depth of completed well 45 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 45 ft.
Threaded ☐ " Diam. from _____ ft. to _____ ft.
Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☒

Manufacturer's Name _____ Model No. _____
Type _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal bentonite & cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation _____ ft.
above mean sea level _____
Static level 18 ft. below top of well Date 1/16/79
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? _____
Yield: gal./min. with _____ ft. drawdown after _____ hrs.
" " " " " "
" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Ballor test 30 gal./min. with 10 ft. drawdown after 1 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
brown cemented sand & gravel	0	7
brown sand & occ. gravel	7	24
brown till	24	39
water bearing sand & gravel	39	45

RECEIVED

NOV

DEPT OF ECOLOGY
REGIONAL OFFICE
EDMUNDS, WA 98022

Work started 1/16/79, 19____ Completed 1/16/79, 19____

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Northwest Pump & Drilling Co.
(Person, firm, or corporation) (Type or print)

Address 3245 Auburn Way South, Auburn, WA

[Signed] R.B. DeRemer
(Well Driller)

License No. 0097 Date 1/17/79, 19____

WATER WELL REPORT

STATE OF WASHINGTON

Application No.

Permit No.

61-23861

(1) OWNER: Name NORTHWEST HOMES OF BELLEVUE Address 1420 Jones Ave NE., Renton, WA 98055
(2) LOCATION OF WELL: County KING - NE 1/4 SE 1/4 Sec 27 T 22 N. R 4E W.M.
Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one)
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 84 ft. Depth of completed well 84 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 84 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
..... perforations from ft. to ft.
..... perforations from ft. to ft.
..... perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name JOHNSON
Type stainless Model No.
Diam. 6 Slot size .020 from 83 ft. to 75 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal bentonite & cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level.
Static level 43 ft. below top of well Date 4/22/81
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 20 gal./min. with 12 ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
sand, brown, dry, silty, dry	0	23
sand & gravel, brown	23	41
sand, dry, brown	41	53
water bearing sand, occ. gravel	53	57
silty sand & clay, occ. gravel, blue	57	62
clay, brown, seams of sand	62	84

Work started 4/21/81 19..... Completed 4/22/81 19.....

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME NORTHWEST PUMP & DRILLING COMPANY
(Person, firm, or corporation) (Type or print)

Address 3245 Auburn Way South, Auburn, WA 9800

[Signed] R. B. DeG...
(Well Driller)

License No. 0097 Date 4/27/81 19.....

S. F. No. 7356—OS—(Rev. 4-71).

WATER WELL REPORT

STATE OF WASHINGTON

22/04/32J

Application No.

Permit No.

(1) OWNER: Name Vincent Foster

Address approx 12600 S 284th ST, Redon

(2) LOCATION OF WELL: County King

NE 1/4 SE 1/4 Sec 32 T 22 N, R 4 E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one)
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 168 ft. Depth of completed well 168 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from 0 ft. to 168 ft.
Threaded ☐ " Diam. from " ft. to " ft.
Welded ☒ " Diam. from " ft. to " ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
..... perforations from ft. to ft.
..... perforations from ft. to ft.
..... perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name Johnson 2' riser pipe
Type stainless steel Model No.
Diam. 5 Slot size 10 from 163 ft. to 168 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal pudding clay
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: HP

(8) WATER LEVELS: Land-surface elevation above mean sea level
Static level 147 ft. below top of well Date 9-22-86
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" 14 " 0 " 2 1/2 "
" " " Air Jet "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Surface	0	2
Brown hardpan-clay	2	122
Brown clay	122	132
Brown hardpan	132	148
Brown sand & gravel-later	148	168

RECEIVED

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Work started 9-12, 19 86 Completed 9-22, 19 86

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Johnson Drilling Co., Inc.
(Person, firm, or corporation) (Type or print)

Address 19415 108th Ave SE Renton

[Signed] Brad Johnson
(Well Driller)

License No. 0233 Date 9-22, 19 86

(1) OWNER: Name SMITH BROS. FARMS, INC. Address P.O. Box 778 KENT WA. 98031
 (2) LOCATION OF WELL: County KING - NE 1/4 Sec 35 T 22 N., R 4 E W 3
 Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☒ Municipal ☐
 Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 2
 New well ☒ Method: Dug ☐ Bored ☐
 Deepened ☐ Cable ☒ Driven ☐
 Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 8 inches.
 Drilled 226 ft. Depth of completed well 226 ft.

(6) CONSTRUCTION DETAILS:
 Casing installed: 8 " Diam. from 0 ft. to 211 ft.
 Threaded ☐ " Diam. from _____ ft. to _____ ft.
 Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒
 Type of perforator used _____
 SIZE of perforations _____ in. by _____ in.
 _____ perforations from _____ ft. to _____ ft.
 _____ perforations from _____ ft. to _____ ft.
 _____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐
 Manufacturer's Name Johnson
 Type Telescoping Model No. _____
 Diam. 8 Slot size 0.40 from 216 ft. to 226 ft.
 Diam. 8 Slot size 0.30 from 211 ft. to 216 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: _____
 Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
 Material used in seal Ben-tonite
 Did any strata contain unusable water? Yes ☐ No ☒
 Type of water? _____ Depth of strata _____
 Method of sealing strata off _____

(7) PUMP: Manufacturer's Name STA-RITE
 Type: SUBMERSIBLE #90P6M-3 HP 15

(8) WATER LEVELS: Land-surface elevation above mean sea level... 50 ft.
 Static level NONE ft. below top of well Date July 10-74
 Artesian pressure _____ lbs. per square inch Date _____
 Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
 Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller
 Yield: 140 gal./min. with 200 ft. drawdown after 6 hrs.
 " " " " " " " " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
8:30	200	8:33	55	8:36	35
8:31	110	8:34	45	8:37	30
8:32	70	8:35	40	8:38	27

Date of test July 9-74
 Bailor test 50 gal./min. with 45 ft. drawdown after 2 hrs.
 Artesian flow _____ g.p.m. Date _____
 Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation

MATERIAL	FROM	TO
Black Heavy Top Soil	0	4
grey clay with binder	4	25
Black Sand	25	40
Fine Sand - water bearing	40	51
grey clay	51	80
grey till - compact	80	93
Very dirty - sand & gravel	93	100
Heavy Sand - Fine	100	120
grey clay	120	138
Fine Sand - dirty	138	161
grey clay	160	192
Dirty sand & gravel	192	202
clean coarse sand		
water bearing	205	226

Work started June 14, 1974 Completed July 10, 1974

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Evergreen Drilling
 (Person, firm, or corporation) (Type or print)

Address 25427-5 E 192 Maple Vlle

[Signed] Robert L. Luning
 (Well Driller)

License No. C139 Date July 11, 1974

WATER WELL REPORT

STATE OF WASHINGTON

File Original and First Copy with
the Division of Water Resources
Second Copy — Owner's Copy
Third Copy — Driller's Copy

Application No. 8089
Permit No. 7559

(1) OWNER:

Name King County Water District No. 54
Address P. O. Box 367
Des Moines, Washington 98016

(2) LOCATION OF WELL:

County _____ Owner's number, if any— #4
Bearing and distance from section or subdivision corner
See attached drawing for legal description

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:

Threaded ☐ Welded ☒

16 " Diam. from 0 ft. to 30.5 ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____

(7) PERFORATIONS:

Perforated? ☐ Yes ☒ No

Type of perforator used _____

SIZE of perforations	in.	by	in.
perforations from _____ ft. to _____ ft.			
perforations from _____ ft. to _____ ft.			
perforations from _____ ft. to _____ ft.			
perforations from _____ ft. to _____ ft.			
perforations from _____ ft. to _____ ft.			

(8) SCREENS:

Well screen installed ☐ Yes ☒ No

Manufacturer's Name Johnson Well Screen Co.
Type Stainless Steel Model No. _____
Diam. 1 1/2" Slot size 50 Set from 30.5 ft. to 32.5 ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(9) CONSTRUCTION:

Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.
Was a surface seal provided? ☐ Yes ☒ No To what depth? _____ ft.
Material used in seal—
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(10) WATER LEVELS:

Static level 61 ft. below land surface Date 6-13-67
Artesian pressure _____ lbs. per square inch Date _____
Water is controlled by _____
(Cap, valve, etc.)

(11) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield:	gal./min. with	ft. drawdown after	hrs.
<u>300</u>	<u>110</u>	<u>5</u>	<u>1</u>
<u>300</u>	<u>99</u>	<u>10</u>	<u>1</u>
<u>300</u>	<u>55</u>	<u>15</u>	<u>1</u>

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level
<u>2:15</u>	<u>109.7</u>	<u>2:25</u>	<u>107.5</u>
<u>2:43</u>	<u>107.5</u>	<u>2:30</u>	<u>104.5</u>
<u>2:49</u>	<u>104.3</u>	<u>3:10</u>	<u>104.3</u>

Date of test _____
Bailer test gal./min. with _____ ft. drawdown after _____ hrs.

Artesian flow g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:

Diameter of well _____ inches.

Depth drilled 334 ft. Depth of completed well 325 ft.

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Top soil	0	2
Yellow clay, sand & gravel	2	5
Yellow clay	5	16
Blue clay	16	64
Blue clay, streaks sand & gravel	64	85
Fine & coarse sand & gravel	85	100
Cemented sand & gravel	100	120
Clay & gravel	120	130
Fine & coarse sand - water	130	133
Fine silty sand & clay	133	138
Fine & coarse sand & gravel -		
hard streaks of clay	138	146
Fine & coarse sand, clay & gravel	146	150
Cemented sand & gravel	150	162
Fine & coarse sand, clay & gravel	162	164
Fine & coarse sand, gravel & hard		
clay streaks	164	176
Cont. on attached sheet		

Work started April 20 1967. Completed June 22, 1967

(13) PUMP:

Manufacturer's Name JACUZZI
Type 10 MS7 H.P. 60

Well Driller's Statement:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Richardson Well Drilling Company
(Person, firm, or corporation) (Type or print)

Address 219 So. 115th St., Tacoma, Washington

[Signed] _____ (Well Driller)

License No. 223-02-5194 Date August 2, 1967

(USE ADDITIONAL SHEETS IF NECESSARY)

STATE OF WASHINGTON

Permit No. 91-25001

(1) OWNER: Name KING County WATER DISTRICT⁵⁴ Address 922 South 219th STREET, Des MOINES 50319

(2) LOCATION OF WELL: County KING - NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 8 T. 22 N., R. 4E W.M.

Bearing and distance from section or subdivision corner

(3) **PROPOSED USE:** Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 5

New well	<input checked="" type="checkbox"/>	Method: Dug	<input type="checkbox"/>	Bored	<input type="checkbox"/>
Deepened	<input type="checkbox"/>	Cable	<input checked="" type="checkbox"/>	Driven	<input type="checkbox"/>
Reconditioned	<input type="checkbox"/>	Rotary	<input type="checkbox"/>	Jetted	<input type="checkbox"/>

(5) **DIMENSIONS:** Diameter of well 12 inches.
Drilled 245 ft. Depth of completed well 244 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12" Diam. from +3 ft. to 212.5 ft.
 Threaded ☐ " Diam. from " ft. to " ft.
 Welded ☒ " Diam. from " ft. to " ft.

Perforations: Yes ☐ No ☒

Type of perforator used.....

SIZE of perforations in. by in.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

Screens: Yes ☒ No ☐

Manufacturer's Name COOK
Type 304 STAINLESS Model No. _____
Diam. 10" Slot size #100 from 212.6 ft. to 218 ft.
Diam. 10" Slot size #100 from 223 ft. to 234.15 ft.

Gravel packed: Yes ☐ No ☐ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name NA
Type: HP

(8) **WATER LEVELS:** Land-surface elevation above mean sea level... 175 ft.
 Static level 46.3 ft. below top of well Date 5-6-82
 Artesian pressure _____ lbs. per square inch Date _____
 Artesian water is controlled by _____ (Cap. valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? Morlex & R-n

Yield: 500 gal./min. with 55 ft. drawdown after 5 1/2 hrs

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
10 AM.	74'				
30	69'				
90	61'				

Date of test 5-7-82
 Bailer test gal./min. with ft. drawdown after hrs.
 Artesian flow g.p.m. Date
 Temperature of water 50.4° Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
TOP SOIL	0	8
BLUE CLAY	8	70
GRAY SILTY SAND	70	90
SILTY BLACK AND GREEN SAND AND GRAVEL	90	117
GRAY SILTY SAND AND GRAVEL	117	128
BLACK AND GREEN SAND AND GRAVEL	128	135
GRAY SILTY SAND AND GRAVEL	135	156
BLACK AND GREEN SAND AND GRAVEL (WATER BEARING)	156	202
GRAY SAND WITH SOME GRAVEL	202	208
BLACK AND GREEN SAND AND GRAVEL (WATER BEARING)	208	236
DENSE BLUE-GREEN CLAY AND SAND AND GRAVEL WITH PEAT	236	
TOTAL DEPTH		245

RECEIVED
JUN - 8 1982

JUN - 8 1987

WILLIAMS, ROY
& ASSOC., INC.

Work started 4/6, 1982 Completed 5/15, 1982

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Moelet V. Pilling
(Person, firm, or corporation) (Type or print)

Address 4020 S 170 Street

[Signed] H. J. Miller
(Well Driller)

License No. 0930 Date 6-2 198

Application No. _____
Permit No. *GI-24212P*

(1) OWNER: Name King County Water Dist. #75 Address P. O. Box 58100, Seattle, Wa. 9818

(2) LOCATION OF WELL: County King - 1/4 SE 1/4 Sec 9 T 22 N R 4E W M

Bearing and distance from section or subdivision corner	20' South of previously abandoned well
---	--

(3) **PROPOSED USE:** Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of wells Angle Lake
(if more than one) ...
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rev ☐ Rotary ☒ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 20-12 inches.
 Drilled 496 ft. Depth of completed well 485 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 30" Diam. from 0 ft. to 115 ft.
Threaded ☐ 20" Diam. from + 3 ft. to 415 ft.
Welded ☒ 12" Diam. from See Note (2) ft.

Perforations: Yes ☐ No ☒

Type of perforator used.....

SIZE of perforations in. by in.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

Screens: Yes ☒ No ☐ UOP Johnson
 Manufacturer's Name _____
 Type Watermark SS Model No. -
 Diam. 12 PS Slot size See Note (2) to _____ ft.
 Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: $\frac{1}{2}$ xx 1/8
Gravel placed from See Note (3) ft.

Surface seal: Yes ☒ No ☐ To what depth? See Note (8)
 Material used in seal See Note (8)
 Did any strata contain unusable water? Yes ☐ No ☒
 Type of water? — Depth of strata —
 Method of sealing strata off —

(7) PUMP: Manufacturer's Name.....
Type: HP.....

(8) **WATER LEVELS:** Land-surface elevation above mean sea level... 332 ft.
 Static level... 202 ft. below top of well Date 8/30/83
 Artesian pressure... lbs. per square inch Date...
 Artesian water is controlled by... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? SEI

Yield: 2955 gal./min. with 166 ft. drawdown after 284 hrs

note: Static @ start of test - 224 ft.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
2	328 $\frac{1}{2}$	15	311 $\frac{1}{2}$	60	297
5	321 $\frac{1}{2}$	20	308 $\frac{1}{2}$	90	293
10	315	30	304	120	290

Date of test 8/2-3/83
 Bailer test - gal/min. with - ft. drawdown after - hrs
 Artesian flow - g.p.m. Date -
 Temperature of water - Was a chemical analysis made? Yes ☒ No ☐
 by Owner

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Well log on attached sheet		

(8) **RECEIVED**
OCT 03 1983

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Work started 5/27 1983 Completed 9/15 1983

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Schneider Equipment, Inc.
(Person, firm, or corporation) (Type or print)

Address 21881 River Rd NE, St. Paul, Or. 97137

[Signed] Stephen Schneider
(Well Driller)

License No. 643 Date 9/28 19 83

WATER WELL REPORT

STATE OF WASHINGTON

Application No. 7-11

Permit No.

OWNER: Name King County Water Dist. #75 Address P. O. Box 68100, Seattle, Wa 98188

(2) LOCATION OF WELL: County King - SE 1/4 Sec 9 T. 22 N. R. 4E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) Angle Lake
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rev Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well Abandoned inches.
Drilled 500 ft. Depth of completed well 0 ft.

(6) CONSTRUCTION DETAILS: See details notes

Casing installed: 30 " Diam. from 1 ft. to 36 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐ In drill pipe

Type of perforator used Mills knife
SIZE of perforations 3/8 in. by 2 in.
456 perforations from 179 ft. to 293 ft.
308 perforations from 77 ft. to 154 ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒

Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: pea
Gravel placed from 311 ft. to 500 ft.

Surface seal: Yes ☒ No ☐ To what depth? 4-36 ft.
Material used in seal neat cement grout
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: HP

(8) WATER LEVELS: Land-surface elevation ~332 ft.
Static level 183 ft. below top of well Date 4-28-83
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom? SEI
Yield: 465 gal./min. with 105 ft. drawdown after 3 1/2 hrs.
" See Notes " " " "

Recovery data (time taken as zero when pump turned off). (water level measured from well top to water level) Time in minutes

Time	Water Level	Time	Water Level	Time	Water Level
0	288	10	208		
1	211	15	207		
5	209	20	206		

Date of test 4-28-83
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☒ No ☐
by owner

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Well log on attached sheet and Notes		

(Details) Notes:

- (1) Well was drilled 38" diameter to 36 ft., 30" casing installed from -1' to 36' and 7' to 7 1/2 yds neat cement grout pumped between the 38" bore and 30" casing from 36' to 4'.
- (2) Well was then drilled 18" diameter from 36 ft to 400'; a temporary 8" casing was installed to test the quantity and quality of the lower aquifer and the annular space back filled with pea gravel to 285 ft. then with native clay and bentonite from 285' to approximately 250 ft.
- (3) The lower aquifer was then test pumped and water samples taken (see items 8 & 9) while the annular space above the clay/bentonite plug was kept full of water.
- (4) After test pumping, the 8" casing removed and the hole was reamed to 26" diameter to 302 ft.; whereupon the hole caved in around the drill tools. The bottom of the bit was raised to 300 ft. before the rig was unable to move it further.
- (5) Numerous attempts were made to remove the caved material from the annulus but the hole continued to slough and it was decided to abandon the well

(cont'd attached sheet)

Work started 3-30, 19 83 Completed 6-30, 19 83

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Schneider Equipment, Inc.
(Person, firm, or corporation) (Type or print)

Address 21881 River Rd NE, St. Paul, Or.
97137

[Signed] Stephen J. Schneider
(Well Driller)

License No. 643 Date 7-16, 19 83

KING COUNTY WATER DISTRICT NO. 75
Angle Lake Abandoned Well

(10) WELL LOG:

<u>Material</u>	<u>From</u>	<u>To</u>
Gravel, cobbles & clay (fill)	0	4
Peat	4	14
Hardpan clay, grey	14	16
Gravel, 6" minus	16	19
Gravel, cobbles, boulders w/ some grey clay	19	31
Clay, grey w/ occasional gravel	31	57
Gravel, 8" minus & clay, grey	57	76
Gravel, 5" minus	76	78
Clay, grey w/ brown streaks	78	81
Sand, coarse w/ some gravel	81	85
Gravel, 1½ minus w/ sand, coarse	85	90
Sand, med-fine	90	97
Gravel & sand, 3" minus, cemented	97	144
Gravel & sand, 3" minus	144	184
Clay, brown	184	187
Clay, blue-grey	187	217
Clay, grey, sandy	217	218
Gravel, 3" minus w/ some grey clay	218	219
Gravel, 3/4 minus & fine sand w/ layers of clay, grey	219	223
Sand, medium w/ some gravel, ½" minus	223	224
Clay, grey w/ some gravel	224	225
Sand, med-fine, black	225	226
Sand, medium, w/ some coarse sand & gravel	226	228
Sand, medium, w/ trace of gravel	228	230
Sand, coarse w/ some gravel 3/4 minus	230	231
Gravel, 2" minus w/ sand, coarse-fine	231	232
Gravel, 3" minus w/ sand, coarse-medium	232	240
Gravel, 4" minus w/ sand, coarse-fine	240	255
Gravel, 3" minus w/ sand, coarse & some clay, grey	255	257
Clay, grey	257	367
Clay, grey w/ occasional gravel	367	405
Gravel, coarse sand, & green clay	405	410

RECEIVED
JUL 20 1983
DEPARTMENT OF ECOLOGY
NORTHWEST REGION

KING COUNTY WATER DISTRICT NO. 75

Angle Lake Abandoned Well

Pag 2 of 2

<u>Material</u>	<u>From</u>	<u>To</u>
Clay, grey w/ gravel	410	413
Gravel, 1" minus w/ clay, grey	413	415
Gravel, 2" minus & coarse sand w.b. v. slight cemented	415	434
Gravel, 1" minus w/ clay, fine sandy	434	440
Gravel, 2" minus & coarse sand w.b. v. slight cemented	440	454
Gravel, 2" minus w/ clay	454	458
Gravel, 2" minus w/ coarse sand	458	459
Gravel, 1" minus w/ clay	459	466
Clay, grey w/ gravel & cobbles	466	468
Gravel, 2" minus w/ coarse sand w.b.	468	482
Sand, coarse & gravel w/ clay	482	484
Clay, grey, sandy	484	487
Clay, grey, soft	487	500

(Details) Notes Continued

(6) The hole below the bit was first cleared of material to 311 ft. The drill pipe was perforated and then cut off at 179 ft. Neat cement grout was then pumped from inside the drill pipe from 311 to 170 ft. The drill pipe was then pulled up to approximately 156 ft. when it locked up. The drill pipe was then perforated up to 77 ft. and cut off again. Neat cement grout was then pumped from 170 ft. to the top of the 30" casing as the upper part of the drill pipe was removed. The balance of the hole was covered with native fill.

(7) Tools left in the hole and their locations are:

18" pilot bit	298'-300'
26" hole opener	293'-298'
24" stabilizer	275'-293'
6" flanged drill pipe	179'-275'
6" flanged drill pipe	77'-156'

(8) Construction of a new well was started approximately 20 ft. South of this abandoned hole.

JUL 20 1933

 DEPARTMENT OF ECOLOGY
 NORTHWEST REGION

WATER WELL REPORT

STATE OF WASHINGTON

Application No.

Permit No.

61-24214

(1) OWNER: Name King County Water Dist. #75 Address PO Box 68100, Seattle, Wa. 98188

(2) LOCATION OF WELL: County King NE 1/4 Sec. 8 T. 22 N. R. 4E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) Des Moines Well
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rev Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 24 - 18 inches.
Drilled 383 ft. Depth of completed well 362 ft.

(6) CONSTRUCTION DETAILS: casing is all .375 wall
Casing installed: 24 " Diam. from +4 ft. to 314 ft.
Threaded ☐ 18 " Diam. from 292 ft. to 312 ft.
Welded ☒ 18 " Diam. from 358 ft. to 363 ft.
Lead slip packer installed @ top of upper
Perforations: Yes ☐ No ☒ 18" pipe
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐
Manufacturer's Name UOP Johnson
Type Watermark SS Model No. _____
Diam. 18 " Slot size 150 from 312 ft. to 358 ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: 1/2 x 1/8
Gravel placed from See Note 3 to 383 ft.

Surface seal: Yes ☒ No ☐ To what depth? +1 to 30 ft.
Material used in seal neat cement grout
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ HP _____

(8) WATER LEVELS: Land surface elevation 188 ft.
Static level 72 ft. below top of well Date 7-6-83
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____
(Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? SEI
Yield: 3200 gal./min. with 213 ft. drawdown after 24 hrs.
Note: Static level @ start of test on "4-11-83 was 80 ft.. "

Recovery data (time taken as zero when pump turned off). (water level measured from well top to water level) Time in minutes

Time	Water Level	Time	Water Level	Time	Water Level
0	293	60	168	300	145
30	183	75	165	450	138
45	170	95	162	1320	130

Date of test 4/11 to 13/83
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☒ No ☐
by owner

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Well log on attached sheet		

Notes:

(1) The ground level immediately around the well has been raised. The depths casing locations are referenced from original ground level which was approximately one foot lower than that existing at time of well completion.

(2) The well was drilled 38" diameter to 30 ft.; 32" diameter to 372 ft.; and 18" diameter to 383 ft.

(3) Gravel was placed up to 294 ft. between the 18" screen section casing and the 24" casing and up to 250 ft. between the 24" casing and the bore hole.

(4) Bentonite pellets were placed from 250 ft. to 247 ft.

(5) Mason Sand was placed from 247 ft. to 245 ft.

(6) Sand cement grout was placed from 245 ft. to 30 ft.

Work started 2-22, 19 83. Completed 7-6, 19 83

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Schneider Equipment, Inc.
(Person, firm, or corporation) (Type or print)

Address 21881 River Road N.E., St. Paul, O:
971

[Signed] Stephen J. Schneider
(Well Driller)

License No. 643 Date 7-13, 19 83

King County Water District #75

Des Moines Well

NE $\frac{1}{4}$, Sec. 8, T22N, R4E, WM

<u>Material</u>	<u>From</u>	<u>To</u>
Sand, brown, med. w/ some gravel	0	9
Sand, brown, coarse-fine	9	21
Gravel, 2" minus	21	23
Clay, gritty, brown & grey	23	28
Clay, grey, gritty, occasional gravel	28	31
Gravel, 4" minus	31	36
Clay, grey	36	59
Clay, grey w/ some gravel	59	61
Clay, grey	61	106
Sand, very coarse, & gravel (3" minus)	106	115
Clay, grey, silty	115	132
Sand, med-fine & gravel, 2" minus	132	139
Gravel, 2" minus	139	142
Clay, grey	142	147
Gravel, 1 $\frac{1}{2}$ " minus	147	151
Sand, grey, med-coarse, some gravel	151	156
Sand & gravel, grey, coarse & 1" minus	156	166
Gravel & sand, 1" minus & grey coarse	166	182
Gravel, 3" minus & some grey coarse sand	182	199
Clay, grey	199	201
Gravel, 6" minus & some coarse grey sand	201	210
Clay, multi-colored & multi-textured w/ gravel	210	250
Clay, grey w/ gravel	250	258
Cobbles, boulders, gravel & clay, grey	258	263
Gravel & cobbles w/ clay, grey	263	270

DEPARTMENT OF GEOLOGY
SOUTHWEST REGION

(10) WELL LOG: (cont'd)

King County Water District #75

Des Moines Well

NE $\frac{1}{4}$, Sec. 8, T22N, R4E, WM

<u>Material</u>	<u>From</u>	<u>To</u>
Clay, grey w/ gravel and occasional cobbles	270	303
Clay, blue-grey w/ gravel, soft	303	312
Gravel, 3" minus w/ some blue clay	312	314
Gravel, 3/4" minus w/ some coarse multi-colored sand	314	322
Gravel, 3/4" minus w/ some med-coarse sand	322	334
Gravel, 1 1/2" minus w/ some coarse sand	334	353
Gravel, 3/4-1" minus w/ sand, coarse	353	360
Gravel, 2" minus & fine-coarse grey sand	360	371
Clay, silty, grey	371	383

JUL 20 1933

DEPARTMENT OF GEOLOGY
NORTHWEST REGION

APPENDIX C

PHOTOGRAPHIC DOCUMENTATION

SLIDE IDENTIFICATION SHEET

TYPE OF CAMERA: CANON AE-1/3289855

TDD and PAN NOS.: F10-8706-08; FWA0523SCR

TYPE OF FILM: ED 135-20/KR 135-20

SITE NAME: Widing Transportation

[illegible]

PHOTO IDENTIFICATION SHEET

TYPE OF CAMERA: CANON AE-1/3289855

TDD and PAN NOS.: F10-8706-08; FWA0523SCR

TYPE OF FILM: ED 135-20/KR 135-20

SITE NAME: Widing Transportation

[illegible]



5-13-87
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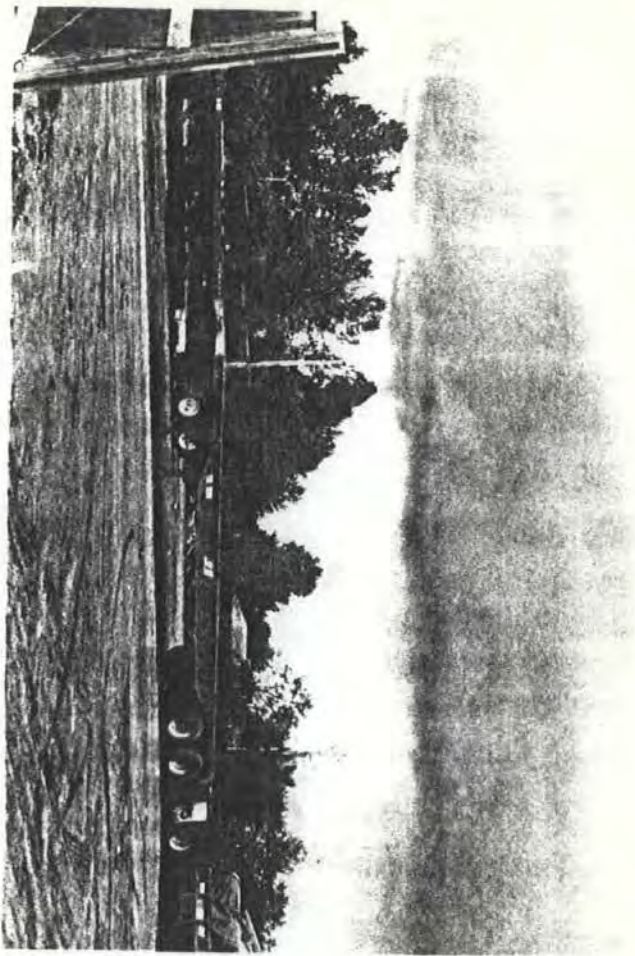


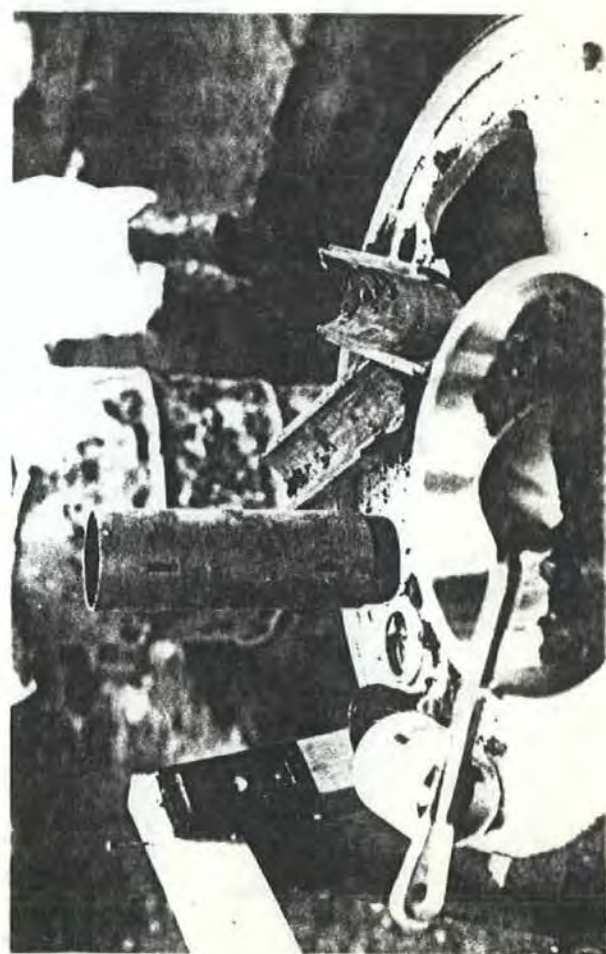
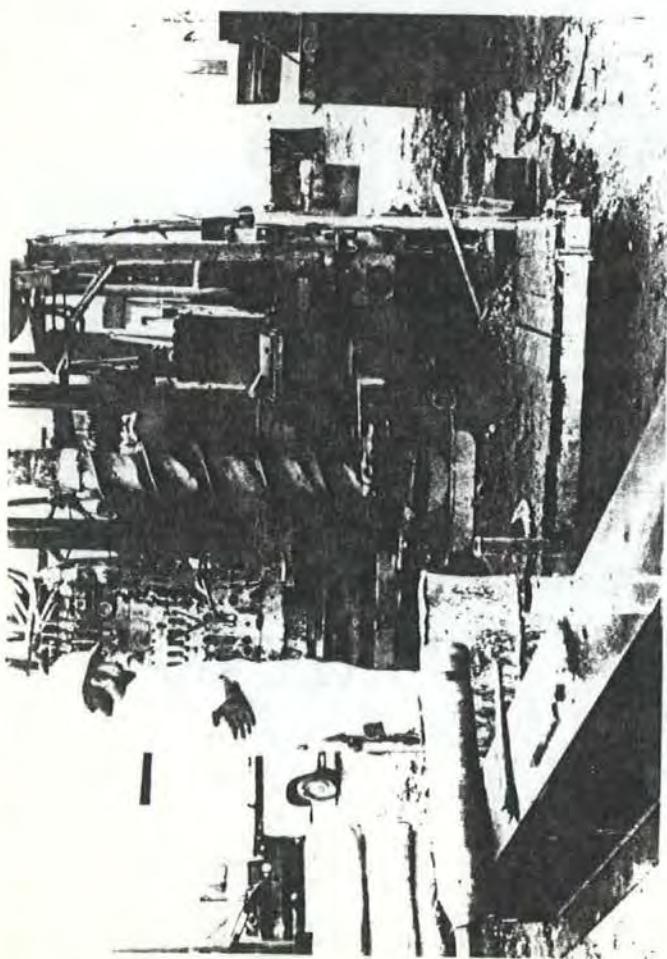
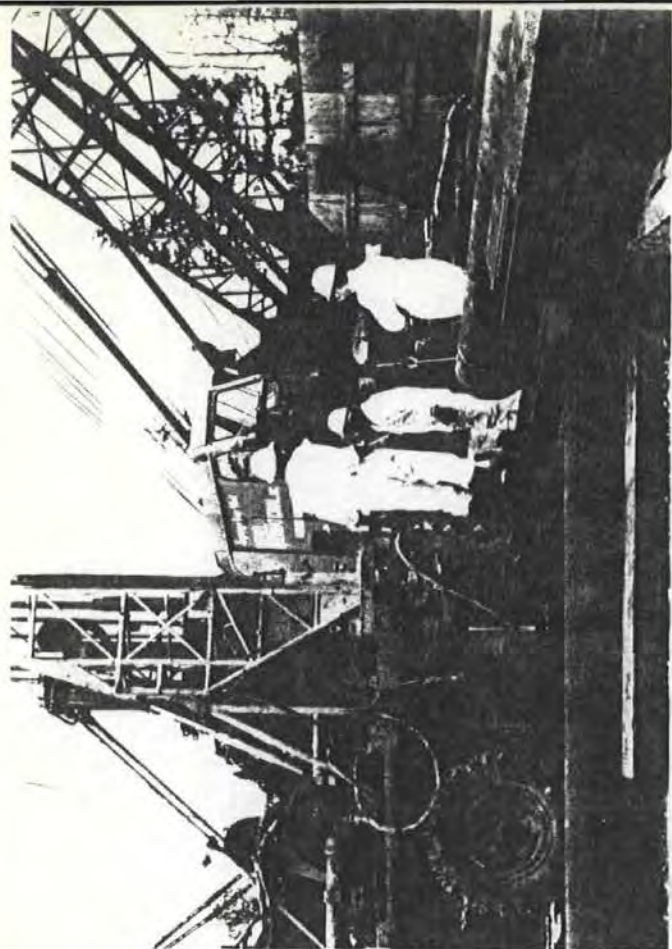
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APPENDIX D

PREVIOUS ANALYTICAL RESULTS FOR
WIDING TRANSPORTATION, INC.

Laucks

Testing Laboratories, Inc.

940 South Harney Street, Seattle, Washington 98108 (206) 767-5060



Certificate

Chemistry, Microbiology, and Technical Services

CLIENT Widing Transportation
P. O. Box 3446
Midway, WA 98032
ATTN: Rod Widing

LABORATORY NO. 81738

DATE August 12, 1983

REPORT ON WASTE SLUDGE

SAMPLE
IDENTIFICATION

Submitted 7/27/83 and marked as shown below:

TESTS PERFORMED
AND RESULTS:

- 1) North Side of Pond
- 2) East Side of Pond (darker color)

This material was analyzed in accordance with 40 CFR 261.24 for EP Toxicity, with results as follow:

	<u>parts per million (mg/L)</u>		
	<u>1</u>	<u>2</u>	<u>MCL</u>
Arsenic	L/0.2	L/0.2	5.0
Barium	L/0.5	L/0.5	100.
Cadmium	L/0.02	L/0.02	1.0
Chromium	1.2	L/0.1	5.0
Lead	0.2	L/0.2	5.0
Mercury	L/0.005	L/0.005	0.2
Selenium	L/0.2	L/0.2	1.0
Silver	L/0.1	L/0.1	5.0

	<u>parts per million (mg/kg)</u>		
Halogenated Hydrocarbons	19.	45.	100.

	<u>% by weight, as received basis</u>		
Total PNAs*	L/1.	L/1.	1.

*In accordance with Washington State Department of Ecology, WAC 173-303, for 4,5,6 membered rings.



This report is submitted for the exclusive use of the person, partnership, or corporation to whom it is addressed. Subsequent use of the name of this company or any member of its staff in connection with the advertising or sale of any product or process will be granted only on contract. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

Laucks

Testing Laboratories, Inc.

940 South Harney Street, Seattle, Washington 98108 (206)767-5060

Chemistry, Microbiology, and Technical Services



Certificate

Widing Transportation

PAGE NO. 2

LABORATORY NO. 81738

	<u>1</u>	<u>2</u>	<u>MCL</u>
pH, 1:1 deionized water slurry	2.3	4.3	**

**Must fall between 2.0 and 12.5 to pass.

Key

L/ indicates "less than"

MCL = Maximum Contamination Level allowed

Respectfully submitted,

Laucks Testing Laboratories, Inc.

Mike Nelson

MN: bg



This report is submitted
in confidence and is not to be
distributed outside the laboratory.

Exclusive use of the person, partnership, or corporation to whom it is addressed. Subsequent use of the name of this company or any
with the advertising or sale of any product or process will be granted only on contract. This company accepts no responsibility except
and/or analysis in good faith and according to the rules of the trade and of science.



COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

July 5, 1985
Log #A850430-K

Widing Transportation
P.O. Box 03159
Portland, Oregon 97203

Analysis Requested: Polynuclear Aromatic Hydrocarbons

Sample ID: #1	Dried Pond Sludge (2 years old) Sampled 4/26/85 North Side	#3	Dried Pond Sludge (2 years old) Sampled 4/26/85 East Side
#2	Dried Pond Sludge (2 years old) Sampled 4/26/85 North Side	#4	Dried Pond Sludge (2 years old) Sampled 4/26/85 East Side

ANALYSIS	#1	#2	#3	#4
-----	----	----	----	----
Naphthalene	20.25	20.25	23.63	27
Phenanthrene	30.73	21.29	14.54	18.38
Anthracene	3.99	2.74	1.00	1.00
Fluoranthene	83.93	66.74	59.66	60.67
Pyrene	135.22	96.75	104.91	136.39
Chrysene	14.84	13.62	14.11	21.65
Benzo(B)fluoranthene	4.77	4.05	3.12	5.30
Benzo(K)fluoranthene	5.18	5.18	5.18	3.11
Benzo(a) Pyrene	4.56	3.99	3.42	4.56

Results given in mg/kg

THIS REPORT CONTINUES



COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.

Portland, OR 97230

Phone: (503) 254-1794

Widing Transportation
Page Two

July 5, 1985
Log #A950430-K

Analysis Requested: Halogenated Hydrocarbons

Sample ID: #1 and #2 - Dried Pond Sludge (2 years old) Sampled 4-26-85
North Side

#3 and #4 - Dried Pond Sludge (2 years old) Sampled 4-26-85
East Side

ANALYSIS	#1	#2	#3	#4
-----	-----	-----	-----	-----
1,2 Dichlorobenzene	0.47	0.68	0.73	1.5
1,4 Dichlorobenzene	< 1	1.1	1.1	< 1
1,2,3,5 Tetrachlorobenzene	18	26	7.5	3.7
1,2,3,4 Tetrachlorobenzene	1.1	2.4	2.8	1.9
Hexachlorobenzene	0.33	0.65	1.0	< 0.3
2 Chloronaphthalene	20	54.8	13.9	26.4
Hexachloroethane	< 0.3	0.35	< 0.3	< 0.3

Results given in mg/Kg

THIS REPORT CONTINUES



COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

July 5, 1985
Log #A850430-K

Widing Transportation
P. O. Box 03159
Portland, Oregon 97203

Attention: Fred Beam

Subject: E P Toxicity Test.

Sample ID: #1 and #2 - Dried Pond Sludge (2 years old) Sampled 4-26-85
North Side

#3 and #4 - Dried Pond Sludge (2 years old) Sampled 4-26-85
East Side

Method of Analysis: Federal Register/Vol.45, No.98/Monday,
May 19, 1980/ Rules and Regulations; Appendix II, Page 33127

Field Data: Samples were collected and delivered by the Client

ANALYSIS	#1	#2	#3	#4	Limit
-----	-----	-----	-----	-----	-----
Arsenic	< 0.05	< 0.05	0.30	< 0.05	5.0
Barium	< 0.05	< 0.05	< 0.05	0.06	100.0
Cadmium	< 0.05	< 0.05	< 0.05	< 0.05	1.0
Chromium	< 0.05	< 0.05	0.35	0.12	5.0
Lead	< 0.05	< 0.05	0.68	0.48	5.0
Mercury	< 0.05	< 0.05	< 0.05	< 0.05	0.2
Selenium	< 0.05	< 0.05	< 0.05	< 0.05	1.0
Silver	< 0.05	< 0.05	< 0.05	< 0.05	5.0

< denotes "less than"

Results expressed in mg/liter

Sincerely,

Susan M. Coffey
President

SMC/db



am test inc.

4900 9TH AVENUE N.W., • SEATTLE, WASHINGTON 98107-3697 • 206/783-4700

ANALYSIS REPORT

CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing
P.O. Box 3446
Midway, WA 98032

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Client Identification

Sediment

Arsenic (ug/g)

13.2
13.7]

Cadmium (ug/g)

<0.30
<0.30]

Chromium (ug/g)

50.
53.]

Lead (ug/g)

19.
21.]

Mercury (ug/g)

0.06
0.05]

Silver (ug/g)

0.157
0.118]

Selenium (ug/g)

<0.20
<0.20]

Nickel (ug/g)

14.
8.]

Beryllium (ug/g)

<0.30
<0.30]

Zinc (ug/g)

23.6
22.9]

Antimony (ug/g)

<0.20
<0.20]

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Client Identification

Sediment

Thallium (ug/g)

2.09
2.02]

Copper (ug/g)

30.
31.]

Total Solids (%)

88.00

Phenol (ug/g)

2.29

Cyanide (ug/g)

<0.60

*All values reported on a dry weight basis.

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection

Client Identification

Sediment

Limit
(ug/g)

PESTICIDES & PCB'S

Aldrin (ug/g)	ND	0.004
Dieldrin	ND	0.006
p,p'-DDT	ND	0.016
p,p'-DDE	ND	0.006
p,p'-DDD	ND	0.012
Endosulfan I	ND	0.005
Endosulfan II	ND	0.01
Endosulfan Sulfate	ND	0.03
Endrin	ND	0.009
Endrin Aldehyde	ND	0.023
Heptachlor	ND	0.002
Heptachlorepoxyde	ND	0.004
a-BHC	ND	0.002
b-BHC	ND	0.004
g-BHC	ND	0.004
d-BHC	ND	0.004
Toxaphene	ND	0.40
Chlordane	ND	0.04
PCB (1242, 1254, 1260)	ND	0.05

ND - Nothing Detected.

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection

Client Identification

Sediment

Limit

(ug/g)

BASE/NEUTRAL FRACTION GC/MS

Acenaphthene	ND	0.1
Acenaphthylene	ND	0.18
Anthracene	ND	0.1
Bis (2-chloroethoxy) methane	ND	0.27
Bis (2-chloroethyl) ether	ND	0.29
Bis (2-Chloroisopropyl) ether	ND	0.29
Bis (2-ethylhexyl) phthalate	439. 390.1	0.13
Benzidine	ND	2.2
Benzo (a) anthracene	ND	0.10
Benzo (a) pyrene	ND	0.13
Benzo (b) fluoranthene	ND	0.24
Benzo (ghi) perylene	ND	0.21
Benzo (k) fluoranthene	ND	0.13
Butyl benzylphthalate	ND	0.13
Chrysene	ND	0.13
Di-n-butylphthalate	53.6	0.10
Di-n-octylphthalate	ND	0.10
Dibenzo (ah) anthracene	ND	0.13

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection

Client Identification

Sediment

Limit
(ug/g)

Diethylphthalate	ND	1.1
Dimethylphthalate	ND	0.08
Fluoranthene	ND	0.11
Fluorene	ND	0.1
Hexachlorobenzene	ND	0.1
Hexachlorobutadiene	ND	0.05
Hexachlorocyclopentadiene	ND	-
Hexachloroethane	ND	0.08
Indeno (1,2,3-cd) pyrene	ND	0.19
Isophorone	ND	0.11
N-nitrosodi-n-propylamine	ND	-
N-nitrosodimethylamine	ND	-
N-nitrosodiphenylamine	ND	0.1
Naphthalene	0.37	0.08
N-nitrosodiphenylamine	ND	0.1
Naphthalene	0.37	0.08
Nitrobenzene	ND	0.1
Phenanthrene	ND	0.27
Pyrene	ND	0.1

Continued

AT

-6-

CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number	104705	Detection Limit (ug/g)
Client Identification	Sediment	
1,2,4-Trichlorobenzene	ND	0.1
1,2-Dichlorobenzene	ND	0.1
1,2-Diphenylhydrazine	ND	-
1,3-Dichlorobenzene	ND	0.1
1,4-Dichlorobenzene	ND	0.22
2,4-Dinitrotoluene	ND	0.29
2,6-Dinitrotoluene	ND	0.1
2-Chloronaphthalene	ND	0.1
3,3'-Dichlorobenzidine	ND	0.83
4-Bromophenyl phenyl ether	ND	0.1
4-Chlorophenyl phenyl ether	ND	0.21

ND - Nothing Detected.

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection

Client Identification

Sediment

Limit
(ug/g)

ACID FRACTION GC/MS

p-Chloro-m-cresol	ND	0.15
2-Chlorophenol	ND	0.17
2,4-Dichlorophenol	ND	0.14
2,4-Dimethylphenol	ND	0.14
4,6-Dinitro-o-cresol	ND	1.2
2,4-Dinitrophenol	ND	2.1
2-Nitrophenol	ND	0.18
4-Nitrophenol	ND	0.12
Pentachlorophenol	19.8	0.18
Phenol	0.70	0.08
2,4,6-Trichlorophenol	0.87	0.14

ND - Nothing Detected.

Continued

AT

CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection
Limit

Client Identification

Sediment

(ug/g)

PURGEABLE GC/MS

Benzene	ND	0.09
Bromodichloromethane	ND	0.04
Bromoform	ND	0.09
Bromomethane	ND	-
Carbon Tetrachloride	ND	0.06
Chlorobenzene	ND	0.12
Chloroethane	ND	-
2-Chloroethylvinyl ether	ND	-
Chloroform	0.040	0.030
Chloromethane	ND	-
Dibromochloromethane	ND	0.06
Dichlorodifluoromethane	ND	0.08
1,1-Dichloroethane	ND	0.09
1,2-Dichloroethane	ND	0.06
1,1-Dichloroethylene	ND	0.06
Trans-1,2-dichloroethylene	ND	0.03
1,2-Dichloropropane	ND	0.12
Cis-1,3-dichloropropene	ND	0.10

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection

Client Identification

Sediment

Limit
(ug/g)

Trans-1,3-dichloropropene

ND

0.10

1,2-Dichloropropylene

ND

0.12

Ethylbenzene

ND

0.14

Methylene chloride

0.178

0.06

1,1,2,2-Tetrachloroethane

ND

0.14

1,1,2,2-Tetrachloroethene

0.438

0.08

Toluene

0.127

0.12

Xylenes (total)

0.259

0.14

1,1,1-Trichloroethane

0.117

0.08

1,1,2-Trichloroethane

ND

0.10

Trichloroethylene

ND

0.04

Trichlorofluoromethane

ND

0.04

Vinyl chloride

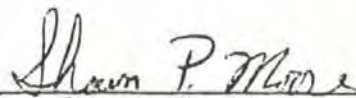
ND

0.04

ND - Nothing Detected.

] - Duplicate analysis.

REPORTED BY


Shawn P. Moore

SPM:vb



Widing Transportation, Inc.
Hauling bulk commodities
over North America

October 15, 1986

RECEIVED

Mr. Ronald C. Devitt
District Inspector, Environmental Quality
Department of Ecology
4350 - 150th Avenue NE
Redmond, WA 98502-5301

JAN 16 1986

DEPT. OF ECOLOGY

Re: Closure of Midway Site

Dear Mr. Devitt:

This letter is in follow-up to my letter of September 15, 1986, and your reply, dated September 19, 1986.

Based on the results of analyses numbers 600408 and 600409, the North Pond was further excavated down to the 30-inch level, and the excavated material transported to the Arlington Pollution Control Center for disposal. Laboratory Sample Numbers 602444, 602445 and 602446 (enclosed) all indicate levels considerably below the State minimum threshold and indicate a good declining trend. Accordingly, we will act on your verbal permission to fill the North Pond with the same high quality fill from the METRO Renton Transfer Pipe.

I have also enclosed, for your additional information, a letter from Rittenhouse-Zeman & Associates, Inc., describing their procedure for sample removal from the ~~SEA~~ North Pond. I also have on hand, which I will provide you in our final report, RZA's report on measurements (depths and locations) of samples taken from the Concrete and North Ponds. Their report also indicates measurements verifying removal of additional soil from the North Pond down to the 30-inch reading.

As soon as the North Pond is filled and the adjacent areas leveled, we will contact you regarding the water quality samples.

Sincerely,

Peter J. Pedone Sr.
Consultant to WIDING TRANSPORTATION, INC.

PJP:ns

Enclosures

cc: Mr. John Conroy
Mr. Wally Swofford

ENCLOSURE #7



am test inc.

14603 N.E. 87th • REDMOND, WASHINGTON 98053 • 206/885-1664

ANALYSIS REPORT

CLIENT: Widing Transportation

DATE RECEIVED: 9/3/86 (600408-41)
9/25/86 (602444-4)

REPORT TO: Pete Pedone
P.O. Box 3446
Midway, WA 98032

DATE REPORTED: 9/30/86

Laboratory Sample Number	600408	600409	600410	600411	Detection Limit
Client Identification	N-1 18"	N-2 24"	Conc. 1 12"	Conc. 2 18"	($\mu\text{g/g}$)
bis-2-ethylhexylphthalate ($\mu\text{g/g}$)	143.	228.	1.2	1.8	0.13
butylbenzylphthalate ($\mu\text{g/g}$)	0.3	0.3	ND	ND	0.10
Di-n-butylphthalate ($\mu\text{g/g}$)	4.1	7.8	0.2	0.2	0.10
Di-n-octylphthalate ($\mu\text{g/g}$)	ND	ND	ND	ND	0.10
Di-ethylphthalate ($\mu\text{g/g}$)	ND	ND	ND	ND	0.10
Di-methylphthalate ($\mu\text{g/g}$)	ND	ND	ND	ND	0.08
Moisture (%)	7.3	7.5	6.3	6.0	-

Continued



CLIENT: Widing Transportation

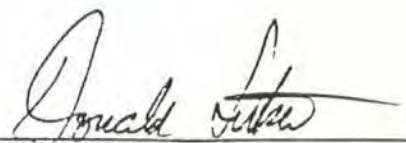
DATE RECEIVED: 9/3/86 (600408-411)
9/25/86 (602444-446)

REPORT TO: Pete Pedone

DATE REPORTED: 9/30/86

Laboratory Sample Number	602444	602445	602446	Detection Limit ($\mu\text{g/g}$)
Client Identification	N-30" 9/23/86 1555	N-36" 9/23/86 1603	N-42" 9/23/86 1610	
<i>ppm</i>				
bis-2-ethylhexylphthalate ($\mu\text{g/g}$)	5.94	0.85	0.48	0.13
butylbenzylphthalate ($\mu\text{g/g}$)	ND	ND	ND	0.10
Di-n-butylphthalate ($\mu\text{g/g}$)	ND	ND	ND	0.10
Di-n-octylphthalate ($\mu\text{g/g}$)	ND	ND	ND	0.10
Di-ethylphthalate ($\mu\text{g/g}$)	ND	ND	ND	0.10
Di-methylphthalate ($\mu\text{g/g}$)	ND	ND	ND	0.08
Moisture (%)	7.4	6.8	8.5	-

REPORTED BY


Donald Sitkei

DS:vb

TABLE 1
Sample Point Collection Data

Sample Identification	Date Sampled	Time Sampled	Depth	Elevation ²
			Below Ground Surface (inches)	
CON-1	9/3/86	1320	12	86.0
CON-2	9/3/86	1340	18	85.5
N-1	9/3/86	1230	18	79.5
N-2	9/3/86	1255	24	79.0
N-6	*1	*1	6	80.8
N-12	*1	*1	12	80.3
N-30	9/23/86	1555	30	78.8
N-36	9/23/86	1603	36	78.3
N-42	9/23/86	1610	42	77.8
N-48	9/23/86	1615	48	77.3
N-54	9/23/86	1622	54	76.8
N-60	9/23/86	1633	60	76.3

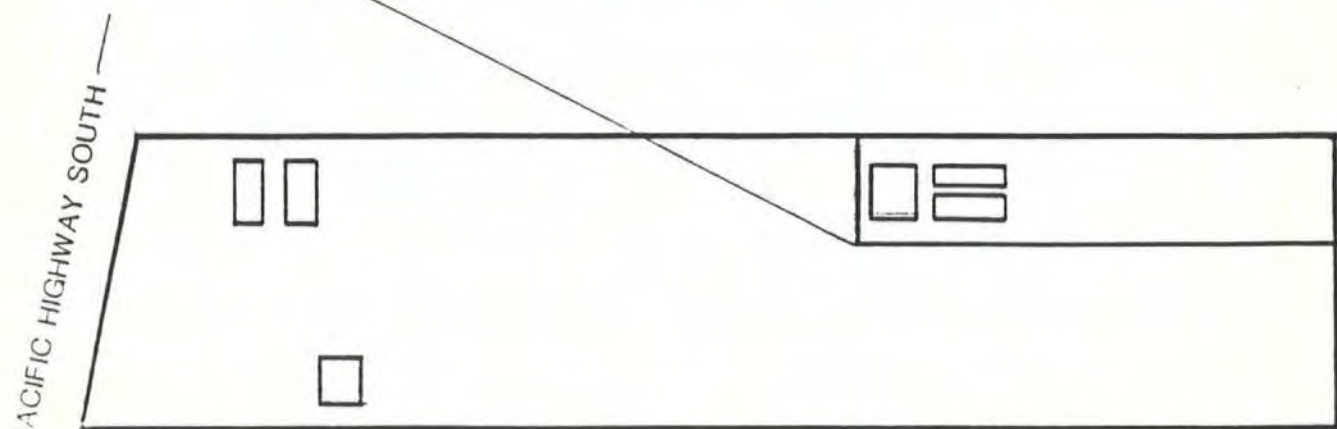
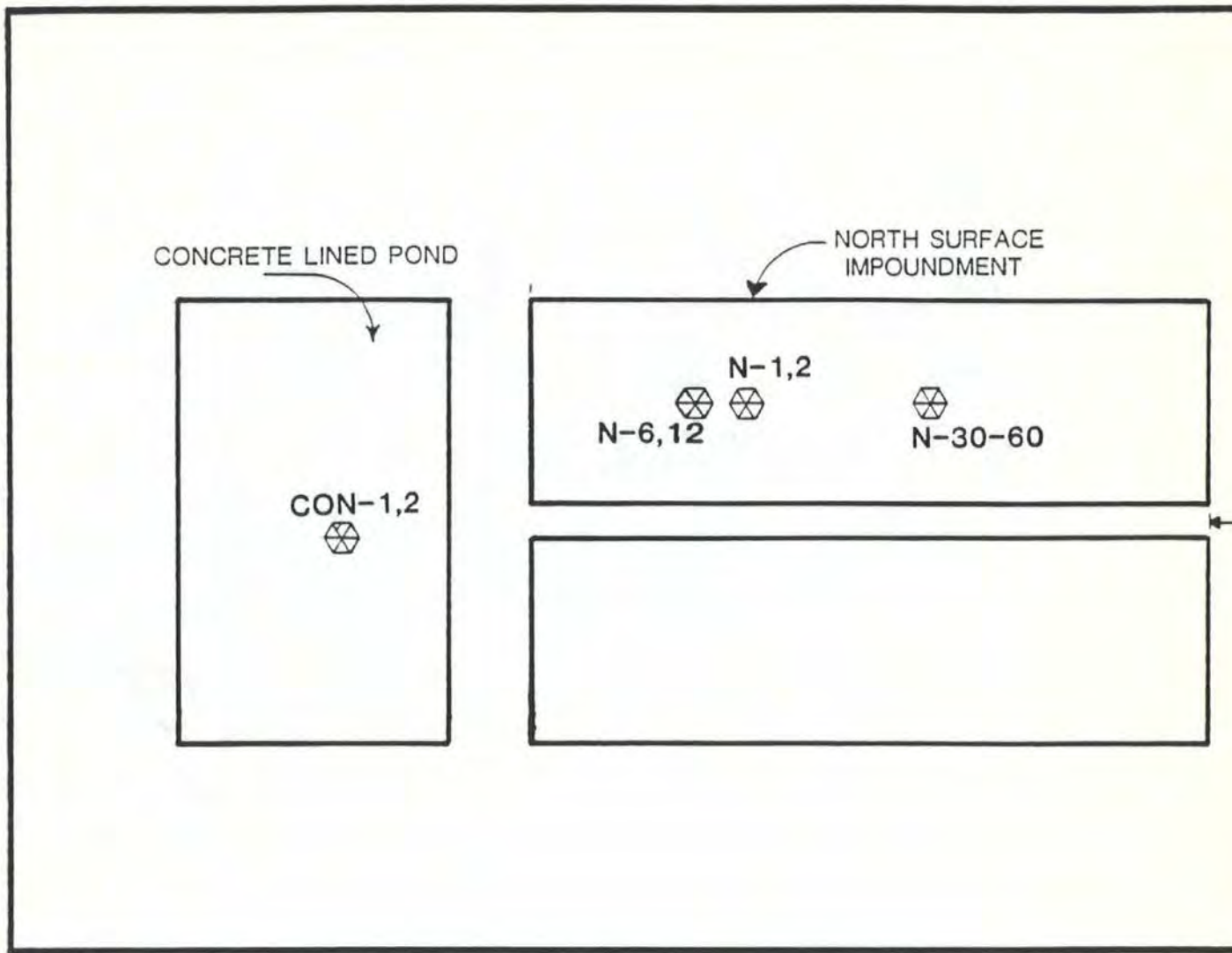
*1 - Samples collected by Widing Transportation Company

2 - Based on arbitrary datum (see text)

Con-2 - Sample obtained from concrete lined pond

N-60 - Sample obtained from north surface impoundment

For horizontal locations, refer to Figure 1

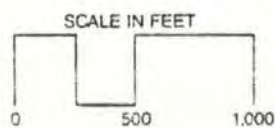
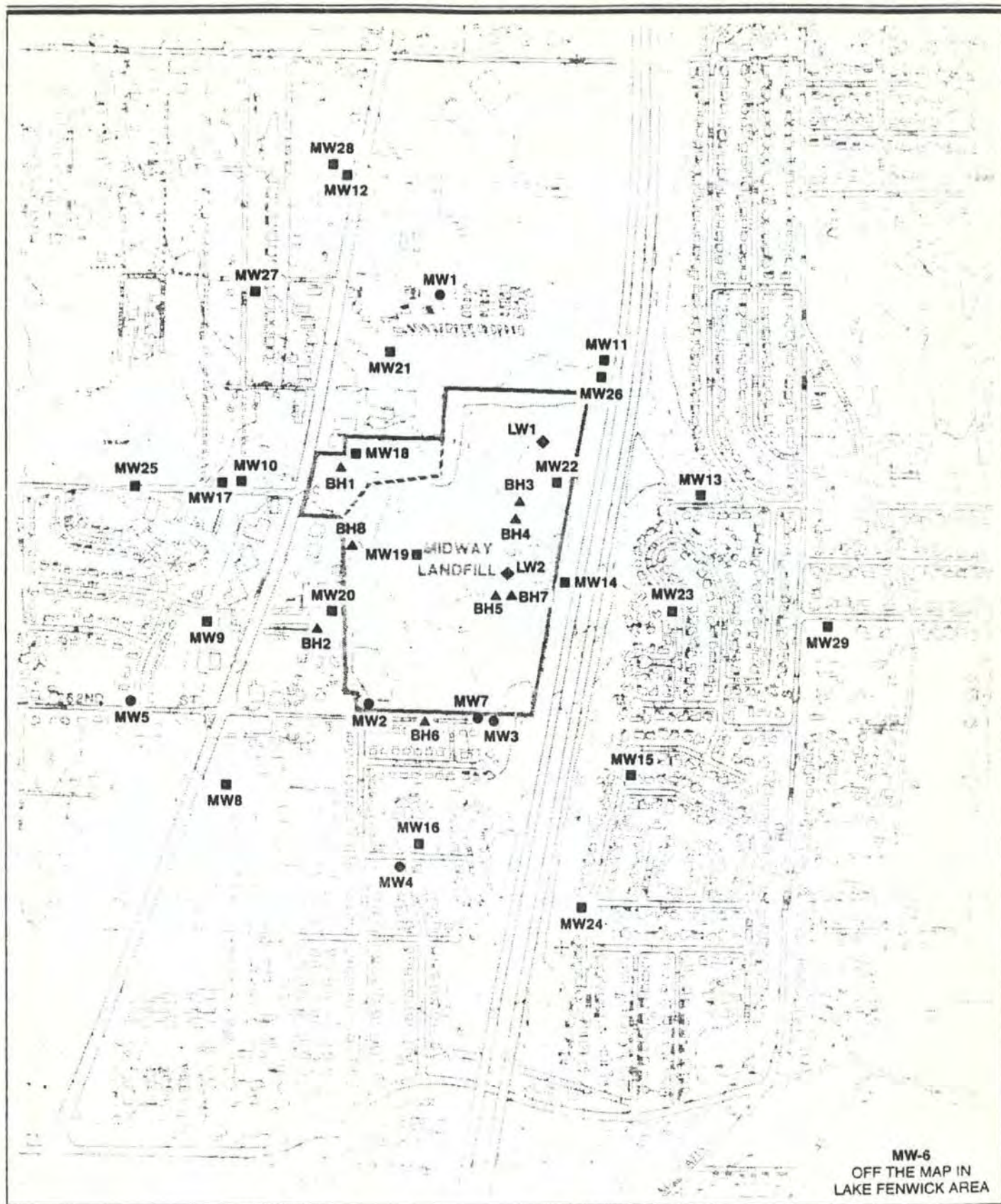


PROJECT LOCATION MAP



APPENDIX E

PREVIOUS ANALYTICAL RESULTS:
CITY OF SEATTLE MIDWAY LANDFILL STUDY



- ◆ Leachate Wells
- Newer MW Wells (7-29)
- Older MW Wells (1-6)
- ▲ BHI Series Wells (1-3)

Figure 4.
All Monitoring
Wells Sampled

METALS
DATA SHEET

Client: City of Seattle
Date Received: 5-21-85
Date Reported: 6-28-85
Project: Midway Landfill

Sample Matrix: Water
Units: milligrams per liter
(mg/L)

ATI SAMPLE I.D.	8505 0128	8505 0129	8505 0130	8505 0131	8505 0132	8505 0133	8505 0134	8505 0135
CLIENT SAMPLE I.D.	MW-1	MW-2	MW-4	DMW-4	BH-6	BH-8	South Pond	North Pond
Copper	0.04	0.05	0.03	0.02	<0.02	<0.02	<0.02	<0.02
<i>TOTAL</i> Iron	1.21	16.7	4.75 ^{4.925}	5.10	11.6	25.4	0.46	18.7
Zinc	0.01	0.02	0.01	0.01	0.71	0.02	<0.01	0.02
Nickel	<0.01	0.02	0.01	0.01	0.05	<0.01	0.01	<0.01
Lead	<0.005	0.012	<0.005	0.005	0.010	0.007	<0.005	0.26
Manganese	0.005	0.45	0.17	0.16	10.2	7.45	0.05	3.54
Barium	0.01	0.07	0.05	0.04	0.29	0.03	0.03	0.17
Arsenic	<0.005	<0.010	<0.005	<0.005	<0.005	0.027	<0.005	<0.005
Mercury	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5

ANALYTICAL TECHNOLOGIES, INC.

I.D. 01-002264

DATA SHEET

Client: City of Seattle
Date Received: 5-21-85
Date Reported: 6-28-85
Project: Midway Landfill

Sample Matrix: Water

ATI SAMPLE I.D.	CLIENT SAMPLE I.D.	TOTAL ORGANIC CARBON (mg/L)	ALKALINITY (mg/L)	TURBIDITY (ntu)
8505-0128	MW-1	1.7	54.7	24
8505-0129	MW-2	1.7	125	28
8505-0130	MW-4	1.0	124	1075
8505-0131	DMW-4	1.0	125	15
8505-0132	BH-6	59.3	1750	118
8505-0133	BH-8	12.7	536	0.8
8505-0134	South Pond	18.1	150	8.3
8505-0135	North Pond	26.9	109	63



Analytical Technologies, Inc.

ATI I.D. # 01-002264

ATI Sample I.D. 8506-0128

SEMI-VOLATILE ORGANIC ANALYSIS
DATA SHEET

Client: City of Seattle
Sample I.D.: MW-1
Sample Matrix: Water
Method No.: 625
Units: micrograms per liter (ug/L)
Project: Midway Landfill

Date Sampled: 5-17-85
Date Received by Lab: 5-21-85
Date Extracted: 5-31-85
Date Analyzed: 5-31-85
Date Reported: 6-28-85

<u>10U</u>	N-Nitrosodimethylamine	<u>10U</u>	4-Chloro-3-Methylphenol
<u>10U</u>	Phenol	<u>10U</u>	2-Methylnaphthalene
<u>10U</u>	Aniline	<u>10U</u>	Hexachlorocyclopentadiene
<u>10U</u>	bis(2-Chloroethyl)Ether	<u>10U</u>	2,4,6-Trichlorophenol
<u>10U</u>	2-Chlorophenol	<u>50U</u>	2,4,5-Trichlorophenol
<u>10U</u>	1,3-Dichlorobenzene	<u>10U</u>	2-Chloronaphthalene
<u>10U</u>	1,4-Dichlorobenzene	<u>50U</u>	2-Nitroaniline
<u>10U</u>	Benzyl Alcohol	<u>10U</u>	Dimethyl Phthalate
<u>10U</u>	1,2-Dichlorobenzene	<u>10U</u>	Acenaphthylene
<u>10U</u>	2-Methylphenol	<u>50U</u>	3-Nitroaniline
<u>10U</u>	bis(2-Chloroisopropyl)Ether		
<u>10U</u>	4-Methylphenol		
<u>10U</u>	N-Nitroso-Di-n-Propylamine		
<u>10U</u>	Hexachloroethane	<u>10U</u>	Acenaphthene
<u>10U</u>	Nitrobenzene	<u>50U</u>	2,4-Dinitrophenol
<u>10U</u>	Isophorone	<u>50U</u>	4-Nitrophenol
<u>10U</u>	2-Nitrophenol	<u>10U</u>	Dibenzofuran
<u>10U</u>	2,4-Dimethylphenol	<u>10U</u>	2,4-Dinitrotoluene
<u>10U</u>	Benzoic Acid	<u>10U</u>	2,6-Dinitrotoluene
<u>10U</u>	bis(2-Chloroethoxyl) Methane	<u>10U</u>	Diethylphthalate
<u>10U</u>	2,4-Dichlorophenol	<u>10U</u>	4-Chlorophenyl-phenylether
<u>10U</u>	1,2,4-Trichlorobenzene	<u>10U</u>	Fluorene
<u>10U</u>	Naphthalene	<u>50U</u>	4-Nitroaniline
<u>10U</u>	4-Chloroaniline	<u>50U</u>	4,6-Dinitro-2-Methylphenol
<u>10U</u>	Hexachlorobutadiene	<u>10U</u>	N-Nitrosodiphenylamine (1)
		<u>10U</u>	4-Bromophenyl-phenylether

SEMI-VOLATILE ORGANIC ANALYSIS
DATA SHEET
[625]

10U	Hexachlorobenzene
50U	Pentachlorophenol
10U	Phenanthrene
10U	Anthracene
10U	Di-n-Butylphthalate
10U	Fluoranthene
100U	Benzidine
10U	Pyrene
10U	Butylbenzylphthalate
20U	3,3-Dichlorobenzidine
10U	Benzo (a) Anthracene
10U	bis(2-Ethylhexyl)Phthalate
10U	Chrysene
10U	Di-n-Octyl Phthalate
10U	Benzo (b) Fluoranthene
10U	Benzo (k) Fluoranthene
10U	Benzo (a) Pyrene
10U	Indeno(1,2,3-cd)Pyrene
10U	Dibenz(a,h)Anthracene
10U	Benzo(g,h,i)Perylene

U = indicates the compound was analyzed for but not detected. The numerical value preceding "U" is the Limit of Detection for that compound, based on dilution.

J = indicates an Estimated Value.

B = indicates the Analyte was found in the blank as well as the sample.

Station: ATI MW-01 Name: MONITORING WELL #1

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
GE01	pH	su			7.83		
GE05	Nitrate as N	ppm	3.40	4.60	2.80	2.60	
GE10	Total Organic Carbon (TOC) .	ppm	1.9	1.0	0.5<	0.8	
GE11	Total Organic Halides (TOX) .	ppm	0.008<	0.015	0.008<	0.018	
GE12	Biochem Oxygen Demand	ppm		2.0<	1.0<	4.0	
GE13	Chemical Oxygen Demand.....	ppm	5.0<	5.0	5.0<	5.0<	
GE14	Cyanide.....	ppm	0.010<	0.010<	0.010<	0.010<	
GE15	Sulfate.....	ppm	25.0	24.0	17.0	17.0	
GE16	Sulfide.....	ppm	0.050<	0.050<	0.050<	0.050<	
GE17	Nitrite as Nitrogen.....	ppm	0.050<	0.050<	0.050<	0.050<	
GE18	Ammonia as Nitrogen.....	ppm	0.05<	0.25	0.05<	0.05<	
GE19	Total Kjeldahl Nitrogen.....	ppm	0.01<	0.08	0.09	0.14	
GE20	Chloride.....	ppm	5.3	10.2	6.1	5.5	
GE21	Fluoride.....	ppm	0.50<	0.50<	0.50<	0.50<	
GE22	Total Dissolved Solids.....	ppm	160.0	144.0	140.0	152.0	
GE23	Hardness.....	ppm	85.0	76.8	78.5	71.8	
GE24	Alkalinity.....	ppm	51.0	55.6	47.8	43.3	
GE25	Carbonate.....	ppm	5.0<	5.0<	5.0<	5.0<	
GE26	Bicarbonate.....	ppm	51.0	55.6	47.8	43.3	
GE27	Total Coliform (MPN)	/100	170	11	220	16>	
GE28	Fecal Coliform (MPN).....	/100				2<	
GE29	Field pH.....	su		7.81	N	6.95	
GE30	Field Conductivity.....	uaho		184	N	17	
GE31	Field Temperature.....	Cent			N		
GE32	Field Temperature.....	FAR		47.3		65.5	

As per City of Seattle Documents and Lin Robinson of City
of Seattle (6-30-85):

Rnd-01 Nov. 1986

Rnd-02 Jan. 1987

Rnd-03

Rnd-04 Jul. 1987

Rnd-05 Sept-Oct 1987

Parametrix Inc. -- Environmental Data System
GROUNDWATER REPORT - THRU ROUND 5

12/10/87

Page 16

Station: ATI MW-01 Name: MONITORING WELL #1

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
ME01	Antimony	ppm	0.0020<	0.0020<	0.0020<	0.0020<	
ME02	Arsenic	ppm	0.0020<	0.0020<	0.0020<	0.0020<	
ME03	Beryllium	ppm	0.0200<	0.0200<	0.0200<	0.0100<	
ME04	Cadmium	ppm	0.0004	0.0009	0.0006	0.0021	
ME05	Chromium	ppm	0.0100	0.0100	0.0100<	0.0100<	
ME07	Copper	ppm	0.0200<	0.0200<	0.0200<	0.0200<	
ME08	Lead	ppm	0.0020<	0.0030	0.0020<	0.0020<	
ME09	Mercury	ppm	0.0005<	0.0005<	0.0005<	0.0005<	
ME10	Nickel	ppm	0.0200	0.0100<	0.0100<	0.0100<	
ME11	Selenium	ppm	0.0020<	0.0020<	0.0020<	0.0020<	
ME12	Silver	ppm	0.0500<	0.0500<	0.0500<	0.0500<	
ME13	Thallium	ppm	0.0020<	0.0020<	0.0020<	0.0020<	
ME14	Zinc	ppm	0.0100<	0.1200	0.0100	0.0900	
ME17	Boron.....	ppm	0.500<	0.200<	0.100<	0.100<	
ME18	Calcium.....	ppm	17.600	16.900	16.400	15.900	
ME19	Magnesium.....	ppm	9.900	8.400	9.100	7.800	
ME20	Sodium.....	ppm	7.700	7.600	25.200	7.300	
ME21	Potassium.....	ppm	1.700	11.900	1.800	1.500	
ME22	Iron	ppm	0.080	0.270	0.070	0.010<	
ME23	Manganese.....	ppm	0.020	0.030	0.010<	0.010<	

Station: ATI MW-01 Name: MONITORING WELL #1

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
VA01	Acetone	ppb	10.00U	10.00U	100.00	10.00U	
VA04	Benzene	ppb	1.00U	1.00U	1.00U	1.00U	
VA05	Bromodichloromethane	ppb	1.00U	1.00U	1.00U	1.00U	
VA06	Bromoform	ppb	5.00U	5.00U	5.00U	5.00U	
VA07	Bromoethane	ppb	10.00U	10.00U	10.00U	10.00U	
VA08	2-Butanone	ppb	10.00U	10.00U	10.00U	10.00U	
VA09	Carbon Disulfide	ppb	1.00U	1.00U	1.00U	1.00U	
VA10	Carbon Tetrachloride	ppb	1.00U	1.00U	1.00U	1.00U	
VA11	Chlorobenzene	ppb	1.00U	1.00U	1.00U	1.00U	
VA12	Chloroethane	ppb	1.00U	1.00U	1.00U	1.00U	
VA13	2-Chloroethylvinyl ether ...	ppb	10.00U	10.00U	10.00U	10.00U	
VA14	Chloroform	ppb	1.00	1.00U	1.00U	1.00U	
VA15	Chloromethane	ppb	10.00U	10.00U	10.00U	10.00U	
VA16	Dibromochloromethane	ppb	1.00U	1.00U	1.00U	1.00U	
VA17	1,1-Dichloroethane	ppb	1.00U	1.00U	1.00U	1.00U	
VA18	1,2-Dichloroethane	ppb	1.00U	1.00U	1.00U	1.00U	
VA19	1,1-Dichloroethene	ppb	1.00U	1.00U	1.00U	1.00U	
VA20	trans-1,2-Dichloroethene ...	ppb	1.00U	1.00U	1.00U	1.00U	
VA21	1,2-Dichloropropane	ppb	1.00U	1.00U	1.00U	1.00U	
VA22	cis-1,3-Dichloropropene	ppb	1.00U	1.00U	1.00U	1.00U	
VA23	trans-1,3-Dichloropropene ..	ppb	1.00U	1.00U	1.00U	1.00U	
VA24	Ethylbenzene	ppb	1.00U	1.00U	1.00	1.00U	
VA25	2-Hexanone	ppb	10.00U	10.00U	10.00U	10.00U	
VA26	Methylene Chloride	ppb	5.00U	5.00U	65.00	5.00U	
VA27	4-Methyl-2-pentanone	ppb	10.00U	10.00U	10.00U	10.00U	
VA28	Styrene	ppb	1.00U	1.00U	1.00U	1.00U	
VA29	1,1,2,2-Tetrachloroethane ..	ppb	1.00U	1.00U	1.00U	1.00U	
VA30	Tetrachloroethene (PCE)	ppb	3.00	3.00	4.00	1.00	
VA31	Toluene	ppb	1.00U	1.00U	1.00U	1.00U	
VA32	1,1,1-Trichloroethane	ppb	1.00U	1.00U	1.00U	1.00U	
VA33	1,1,2-Trichloroethane	ppb	1.00U	1.00U	1.00U	1.00U	
VA34	Trichloroethene (TCE)	ppb	1.00U	1.00U	1.00U	1.00U	
VA35	Vinyl Acetate	ppb	10.00U	10.00U	10.00U	10.00U	
VA36	Vinyl Chloride	ppb	1.00U	1.00U	1.00U	1.00U	
VA37	Xylenes (Total)	ppb	1.00U	1.00U	1.00U	1.00U	

Parametrix Inc. -- Environmental Data System
GROUNDWATER REPORT - THRU ROUND 5

12/10/
Page

Station: ATI MW-01 Name: MONITORING WELL #1

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
AC01	Benzoic Acid	ppb	50.00U	50.00U	50.00U	50.00U	
AC02	2-Chlorophenol	ppb	10.00U	10.00U	10.00U	10.00U	
AC03	2,4-Dichlorophenol	ppb	10.00U	10.00U	10.00U	10.00U	
AC04	2,4-Dimethylphenol	ppb	10.00U	10.00U	10.00U	10.00U	
AC05	4,6-Dinitro-2-methylphenol .	ppb	50.00U	50.00U	50.00U	50.00U	
AC06	2,4-Dinitrophenol	ppb	50.00U	50.00U	50.00U	50.00U	
AC07	2-Methylphenol	ppb	10.00U	10.00U	10.00U	10.00U	
AC08	4-Methylphenol	ppb	10.00U	10.00U	10.00U	10.00U	
AC09	2-Nitrophenol	ppb	10.00U	10.00U	10.00U	10.00U	
AC10	4-Nitrophenol	ppb	50.00U	50.00U	50.00U	50.00U	
AC11	4-Chloro-3-methylphenol	ppb	10.00U	10.00U	10.00U	10.00U	
AC12	Pentachlorophenol	ppb	50.00U	50.00U	50.00U	50.00U	
AC13	Phenol	ppb	10.00U	10.00U	10.00U	10.00U	
AC14	2,4,5-Trichlorophenol	ppb	50.00U	50.00U	50.00U	50.00U	
AC15	2,4,6-Trichlorophenol	ppb	10.00U	10.00U	10.00U	10.00U	

Station: ATI MW-01 Name: MONITORING WELL #1

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
BN01	Acenaphthene	ppb	10.00U	10.00U	10.00U	10.00U	
BN02	Acenaphthylene	ppb	10.00U	10.00U	10.00U	10.00U	
BN03	Aniline	ppb	10.00U	10.00U	10.00U	10.00U	
BN04	Anthracene	ppb	10.00U	10.00U	10.00U	10.00U	
BN05	Benzidine	ppb	100.00U	100.00U	100.00U	100.00U	
BN06	Benzo(a)anthracene	ppb	10.00U	10.00U	10.00U	10.00U	
BN07	Benzo(a)pyrene	ppb	10.00U	10.00U	10.00U	10.00U	
BN08	Benzo(b)fluoranthene	ppb	10.00U	10.00U	10.00U	10.00U	
BN09	Benzo(g,h,i)perylene	ppb	10.00U	10.00U	10.00U	10.00U	
BN10	Benzo(k)fluoranthene	ppb	10.00U	10.00U	10.00U	10.00U	
BN11	Benzyl Alcohol	ppb	10.00U	10.00U	10.00U	10.00U	
BN12	bis(2-chloroethoxy)methane .	ppb	10.00U	10.00U	10.00U	10.00U	
BN13	bis(2-chloroethyl)ether	ppb	10.00U	10.00U	10.00U	10.00U	
BN14	bis(2-chloroisopropyl)ether	ppb	10.00U	10.00U	10.00U	10.00U	
BN15	bis(2-ethylhexyl)phthalate .	ppb	110.00	10.00T	10.00U	10.00U	
BN16	4-Bromophenyl-phenyl ether .	ppb	10.00U	10.00U	10.00U	10.00U	
BN17	Butyl benzyl phthalate	ppb	10.00U	10.00U	10.00U	10.00U	
BN18	4-Chloroaniline	ppb	10.00U	10.00U	10.00U	10.00U	
BN19	2-Chloronaphthalene	ppb	10.00U	10.00U	10.00U	10.00U	
BN20	4-Chlorophenyl phenyl ether	ppb	10.00U	10.00U	10.00U	10.00U	
BN21	Chrysene	ppb	10.00U	10.00U	10.00U	10.00U	
BN22	Dibenzo(a,h)anthracene	ppb	10.00U	10.00U	10.00U	10.00U	
BN23	Dibenzofuran	ppb	10.00U	10.00U	10.00U	10.00U	
BN24	1,2-Dichlorobenzene	ppb	10.00U	10.00U	10.00U	10.00U	
BN25	1,3-Dichlorobenzene	ppb	10.00U	10.00U	10.00U	10.00U	
BN26	1,4-Dichlorobenzene	ppb	10.00U	10.00U	10.00U	10.00U	
BN27	3,3'-Dichlorobenzidine	ppb	20.00U	20.00U	20.00U	20.00U	
BN28	Diethyl phthalate	ppb	10.00U	10.00U	10.00U	10.00U	
BN29	Dimethyl phthalate	ppb	10.00U	10.00U	10.00U	10.00U	
BN30	Di-n-Butyl phthalate	ppb	10.00U	10.00U	10.00U	10.00U	
BN31	2,4-Dinitrotoluene	ppb	10.00U	10.00U	10.00U	10.00U	
BN32	2,6-Dinitrotoluene	ppb	10.00U	10.00U	10.00U	10.00U	
BN33	Di-n-Octyl Phthalate	ppb	10.00U	10.00U	10.00U	10.00U	
BN35	Fluoranthene	ppb	10.00U	10.00U	10.00U	10.00U	
BN36	Fluorene	ppb	10.00U	10.00U	10.00U	10.00U	
BN37	Hexachlorobenzene	ppb	10.00U	10.00U	10.00U	10.00U	
BN38	Hexachlorobutadiene	ppb	10.00U	10.00U	10.00U	10.00U	
BN39	Hexachlorocyclopentadiene ..	ppb	10.00U	10.00U	10.00U	10.00U	
BN40	Hexachloroethane	ppb	10.00U	10.00U	10.00U	10.00U	
BN41	Indeno(1,2,3-cd)Pyrene	ppb	10.00U	10.00U	10.00U	10.00U	
BN42	Isophorone	ppb	10.00U	10.00U	10.00U	10.00U	
BN43	2-Methylnaphthalene	ppb	10.00U	10.00U	10.00U	10.00U	
BN44	Naphthalene	ppb	10.00U	10.00U	10.00U	10.00U	
BN45	2-Nitroaniline	ppb	50.00U	50.00U	50.00U	50.00U	
BN46	3-Nitroaniline	ppb	50.00U	50.00U	50.00U	50.00U	
BN47	4-Nitroaniline	ppb	50.00U	50.00U	50.00U	50.00U	
BN49	N-Nitrosodiaethylamine	ppb	10.00U	10.00U	10.00U	10.00U	
BN50	N-Nitrosodipropylamine	ppb	10.00U	10.00U	10.00U	10.00U	
BN51	N-Nitrosodiphenylamine(1) ..	ppb	10.00U	10.00U	10.00U	10.00U	
BN52	Phenanthrene	ppb	10.00U	10.00U	10.00U	10.00U	
BN53	Pyrene	ppb	10.00U	10.00U	10.00U	10.00U	
BN54	1,2,4-Trichlorobenzene	ppb	10.00U	10.00U	10.00U	10.00U	

Parametrix Inc. -- Environmental Data Systems
GROUNDWATER REPORT - THRU ROUND 5

12/11/87
Page 1

Station: AT1 MW-01 Name: MONITORING WELL #1

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
QA01	(BN) Nitrobenzene-D5	%Rec	67.0	61.0	36.0	64.0	
QA02	(BN) 2-Fluorobiphenyl	%Rec	59.0	69.0	60.0	65.0	
QA03	Dibutylchlorodate(PP).....	%Rec	76.0	73.0	84.0	97.0	
QA04	1,2-Dichloroethane-D4 (VA)..	%Rec	99.0	89.0	92.0	109.0	
QA05	Bromofluorobenzene (VA)....	%Rec	100.0	99.0	112.0	98.0	
QA06	Toluene-D6 (VA).....	%Rec	100.0	100.0	100.0	105.0	
QA08	Terphenyl (BN).....	%Rec	75.0	91.0	72.0	86.0	
QA09	Phenol-D5 (AC).....	%Rec	54.0	55.0	42.0	77.0	
QA10	2-Fluorophenol (AC).....	%Rec	86.0	73.0	68.0	87.0	
QA11	2,4,6-Tribromophenol.....	%Rec	65.0	48.0	36.0	71.0	

Station: ATI MW-01 Name: MONITORING WELL #1

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
PP01	Aldrin	ppb		0.05U	0.05U	0.05U	
PP02	alpha-BHC	ppb		0.05U	0.10U	0.05U	
PP03	beta-BHC	ppb		0.05U	0.05U	0.05U	
PP04	delta-BHC	ppb		0.05U	0.10U	0.05U	
PP05	gamma-BHC (Lindane)	ppb		0.05U	0.05U	0.05U	
PP06	Chlordane	ppb		0.50U	0.50U	0.50U	
PP07	4,4'-DDD	ppb		0.10U	0.10U	0.10U	
PP08	4,4'-DDE	ppb		0.10U	0.10U	0.10U	
PP09	4,4'-DDT	ppb		0.10U	0.10U	0.10U	
PP10	Dieldrin	ppb		0.10U	0.10U	0.10U	
PP11	Endosulfan I	ppb		0.05U	0.05U	0.05U	
PP12	Endosulfan II	ppb		0.10U	0.10U	0.10U	
PP13	Endosulfan sulfate	ppb		0.10U	0.10U	0.10U	
PP14	Endrin	ppb		0.10U	0.10U	0.10U	
PP15	Endrin aldehyde	ppb		0.10U	0.10U	0.10U	
PP17	Heptachlor	ppb		0.05U	0.05U	0.05U	
PP18	Heptachlor epoxide	ppb		0.05U	0.05U	0.05U	
PP19	Methoxychlor	ppb		0.50U	0.50U	0.50U	
PP20	PCB-1016	ppb		0.50U	0.50U	0.50U	
PP21	PCB-1221	ppb		0.50U	0.50U	0.50U	
PP22	PCB-1232	ppb		0.50U	0.50U	0.50U	
PP23	PCB-1242	ppb		0.50U	0.50U	0.50U	
PP24	PCB-1248	ppb		0.50U	0.50U	0.50U	
PP25	PCB-1254	ppb		1.00U	1.00U	1.00U	
PP26	PCB-1260	ppb		1.00U	1.00U	1.00U	
PP27	Toxaphene	ppb		1.00U	1.00U	1.00U	

Parasetrix Inc. -- Environmental Data System
GROUNDWATER REPORT - THRU ROUND 5

12/10/8
Page 7

Station: ATI MW-28 Name: MONITORING WELL #28

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
GE05	Nitrate as N	ppm				1.50	2.70
GE10	Total Organic Carbon (TOC) .	ppm				1.6	2.6
GE11	Total Organic Halides (TOX) .	ppm				0.024	0.008
GE12	Biochem Oxygen Demand	ppm				1.4	*
GE13	Chemical Oxygen Demand.....	ppm				5.0<	7.0
GE14	Cyanide.....	ppm				0.010<	0.010<
GE15	Sulfate.....	ppm				160.0	83.8
GE16	Sulfide.....	ppm				0.050<	0.050<
GE17	Nitrite as Nitrogen.....	ppm				0.050<	0.050<
GE18	Ammonia as Nitrogen.....	ppm				0.02<	0.05<
GE19	Total Kjeldahl Nitrogen.....	ppm				0.34	0.30
GE20	Chloride.....	ppm				7.2	13.2
GE21	Fluoride.....	ppm				0.50<	0.50<
GE22	Total Dissolved Solids.....	ppm				465.0	245.0
GE23	Hardness.....	ppm				301.0	208.0
GE24	Alkalinity.....	ppm				162.0	133.0
GE25	Carbonate.....	ppm				5.0<	5.0<
GE26	Bicarbonate.....	ppm				162.0	133.0
GE27	Total Coliform (MPN)	/100				50	16>
GE28	Fecal Coliform (MPN).....	/100				2<	16>
GE29	Field pH.....	su				6.96	6.61
GE30	Field Conductivity.....	umho				583	413
GE31	Field Temperature.....	Cent				14.3	12.5
GE33	Hydroxide.....	ppm					5.0<

As per Lin Robinson, City of Seattle (6-30-88)

Rnd-04 Jul 1987
Rnd-05 Sept. Oct 1987

(J. Skinner)

Parametrix Inc. -- Environmental Data System
GROUNDWATER REPORT - THRU ROUND 5

12/10/8

Page 5

Station: AT1 MW-28 Name: MONITORING WELL 428

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
AC01	Benzoic Acid	ppb				50.00U	50.00<
AC02	2-Chlorophenol	ppb				10.00U	10.00<
AC03	2,4-Dichlorophenol	ppb				10.00U	10.00<
AC04	2,4-Dimethylphenol	ppb				10.00U	10.00<
AC05	4,6-Dinitro-2-methylphenol .	ppb				50.00U	50.00<
AC06	2,4-Dinitrophenol	ppb				50.00U	50.00<
AC07	2-Methylphenol	ppb				10.00U	10.00<
AC08	4-Methylphenol	ppb				10.00U	10.00<
AC09	2-Nitrophenol	ppb				10.00U	10.00<
AC10	4-Nitrophenol	ppb				50.00U	50.00<
AC11	4-Chloro-3-methylphenol	ppb				10.00U	10.00<
AC12	Pentachlorophenol	ppb				50.00U	50.00<
AC13	Phenol	ppb				10.00U	10.00<
AC14	2,4,5-Trichlorophenol	ppb				50.00U	50.00<
AC15	2,4,6-Trichlorophenol	ppb				10.00U	10.00<

Station: ATI MH-23 Name: MONITORING WELL #28

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
BN01	Acenaphthene	ppb				10.00U	10.00C
BN02	Acenaphthylene	ppb				10.00U	10.00C
BN03	Aniline	ppb				10.00U	10.00C
BN04	Anthracene	ppb				10.00U	10.00C
BN05	Benzidine	ppb				100.00U	100.00C
BN06	Benzo(a)anthracene	ppb				10.00U	10.00C
BN07	Benzo(a)pyrene	ppb				10.00U	10.00C
BN08	Benzo(b)fluoranthene	ppb				10.00U	10.00C
BN09	Benzo(g,h,i)perylene	ppb				10.00U	10.00C
BN10	Benzo(k)fluoranthene	ppb				10.00U	10.00C
BN11	Benzyl Alcohol	ppb				10.00U	10.00C
BN12	bis(2-chloroethoxy)methane .	ppb				10.00U	10.00C
BN13	bis(2-chloroethyl)ether	ppb				10.00U	10.00C
BN14	bis(2-chloroisopropyl)ether	ppb				10.00U	10.00C
BN15	bis(2-ethylhexyl)phthalate .	ppb				10.00U	10.00C
BN16	4-Bromophenyl-phenyl ether .	ppb				10.00U	10.00C
BN17	Butyl benzyl phthalate	ppb				10.00U	10.00C
BN18	4-Chloroaniline	ppb				10.00U	10.00C
BN19	2-Chloronaphthalene	ppb				10.00U	10.00C
BN20	4-Chlorophenyl phenyl ether	ppb				10.00U	10.00C
BN21	Chrysene	ppb				10.00U	10.00C
BN22	Dibenzo(a,h)anthracene	ppb				10.00U	10.00C
BN23	Dibenzofuran	ppb				10.00U	10.00C
BN24	1,2-Dichlorobenzene	ppb				10.00U	10.00C
BN25	1,3-Dichlorobenzene	ppb				10.00U	10.00C
BN26	1,4-Dichlorobenzene	ppb				10.00U	10.00C
BN27	3,3'-Dichlorobenzidine	ppb				20.00U	20.00C
BN28	Diethyl phthalate	ppb				10.00U	10.00C
BN29	Dimethyl phthalate	ppb				10.00U	10.00C
BN30	Di-n-Butyl phthalate	ppb				10.00U	10.00C
BN31	2,4-Dinitrotoluene	ppb				10.00U	10.00C
BN32	2,6-Dinitrotoluene	ppb				10.00U	10.00C
BN33	Di-n-Octyl Phthalate	ppb				10.00U	10.00C
BN35	Fluoranthene	ppb				10.00U	10.00C
BN36	Fluorene	ppb				10.00U	10.00C
BN37	Hexachlorobenzene	ppb				10.00U	10.00C
BN38	Hexachlorobutadiene	ppb				10.00U	10.00C
BN39	Hexachlorocyclopentadiene ..	ppb				10.00U	10.00C
BN40	Hexachloroethane	ppb				10.00U	10.00C
BN41	Indeno(1,2,3-cd)Pyrene	ppb				10.00U	10.00C
BN42	Isophorone	ppb				10.00U	10.00C
BN43	2-Methylnaphthalene	ppb				10.00U	10.00C
BN44	Naphthalene	ppb				10.00U	10.00C
BN45	2-Nitroaniline	ppb				50.00U	50.00C
BN46	3-Nitroaniline	ppb				50.00U	50.00C
BN47	4-Nitroaniline	ppb				50.00U	50.00C
BN49	N-Nitrosodimethylamine	ppb				10.00U	10.00C
BN50	N-Nitrosodipropylamine	ppb				10.00U	10.00C
BN51	N-Nitrosodiphenylamine(1) ..	ppb				10.00U	10.00C
BN52	Phenanthrene	ppb				10.00U	10.00C
BN53	Pyrene	ppb				10.00U	10.00C
BN54	1,2,4-Trichlorobenzene	ppb				10.00U	10.00C

Parametrix Inc. -- Environmental Data System
GROUNDWATER REPORT - THRU ROUND 5

12/10/E
Page 7

Station: ATI MW-28 Name: MONITORING WELL #28

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
ME01	Antimony	ppm				0.0020<	0.0020<
ME02	Arsenic	ppm				0.0020<	0.0020<
ME03	Beryllium	ppm				0.0200<	0.0100<
ME04	Cadmium	ppm				0.0013	0.0009
ME05	Chromium	ppm				0.0100<	0.0100<
ME07	Copper	ppm				0.0200<	0.0200<
ME08	Lead	ppm				0.0020	0.0020<
ME09	Mercury	ppm				0.0005<	0.0005<
ME10	Nickel	ppm				0.0100<	0.0100
ME11	Selenium	ppm				0.0020<	0.0020<
ME12	Silver	ppm				0.0500<	0.0500<
ME13	Thallium	ppm				0.0020<	0.0020<
ME14	Zinc	ppm				0.0200	0.0100
ME17	Boron.....	ppm				0.100<	0.100<
ME18	Calcium.....	ppm				55.400	40.600
ME19	Magnesium.....	ppm				39.400	25.100
ME20	Sodium.....	ppm				20.500	15.500
ME21	Potassium.....	ppm				4.200	5.300
ME22	Iron	ppm				0.950	0.010<
ME23	Manganese.....	ppm				0.470	0.390

Station: ATI MW-28 Name: MONITORING WELL #28

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
PP01	Aldrin	ppb				0.050	0.050
PP02	alpha-BHC	ppb				0.050	0.050
PP03	beta-BHC	ppb				0.050	0.050
PP04	delta-BHC	ppb				0.050	0.050
PP05	gamma-BHC (Lindane)	ppb				0.050	0.050
PP06	Chlordane	ppb				0.500	0.500
PP07	4,4'-DDD	ppb				0.100	0.100
PP08	4,4'-DDE	ppb				0.100	0.100
PP09	4,4'-DDT	ppb				0.100	0.100
PP10	Dieldrin	ppb				0.100	0.100
PP11	Endosulfan I	ppb				0.050	0.050
PP12	Endosulfan II	ppb				0.100	0.100
PP13	Endosulfan sulfate	ppb				0.100	0.100
PP14	Endrin	ppb				0.100	0.100
PP15	Endrin aldehyde	ppb				0.100	0.100
PP17	Heptachlor	ppb				0.050	0.050
PP18	Heptachlor epoxide	ppb				0.050	0.050
PP19	Methoxychlor	ppb				0.500	0.500
PP20	PCB-1015	ppb				0.500	0.500
PP21	PCB-1221	ppb				0.500	0.500
PP22	PCB-1232	ppb				0.500	0.500
PP23	PCB-1242	ppb				0.500	0.500
PP24	PCB-1248	ppb				0.500	0.500
PP25	PCB-1254	ppb				1.000	1.000
PP26	PCB-1260	ppb				1.000	1.000
PP27	Toxaphene	ppb				1.000	1.000

Parametrix Inc. -- Environmental Data System
GROUNDWATER REPORT - THRU ROUND 5

12/11/8
Page 7

Station: AT1 MW-28 Name: MONITORING WELL #28

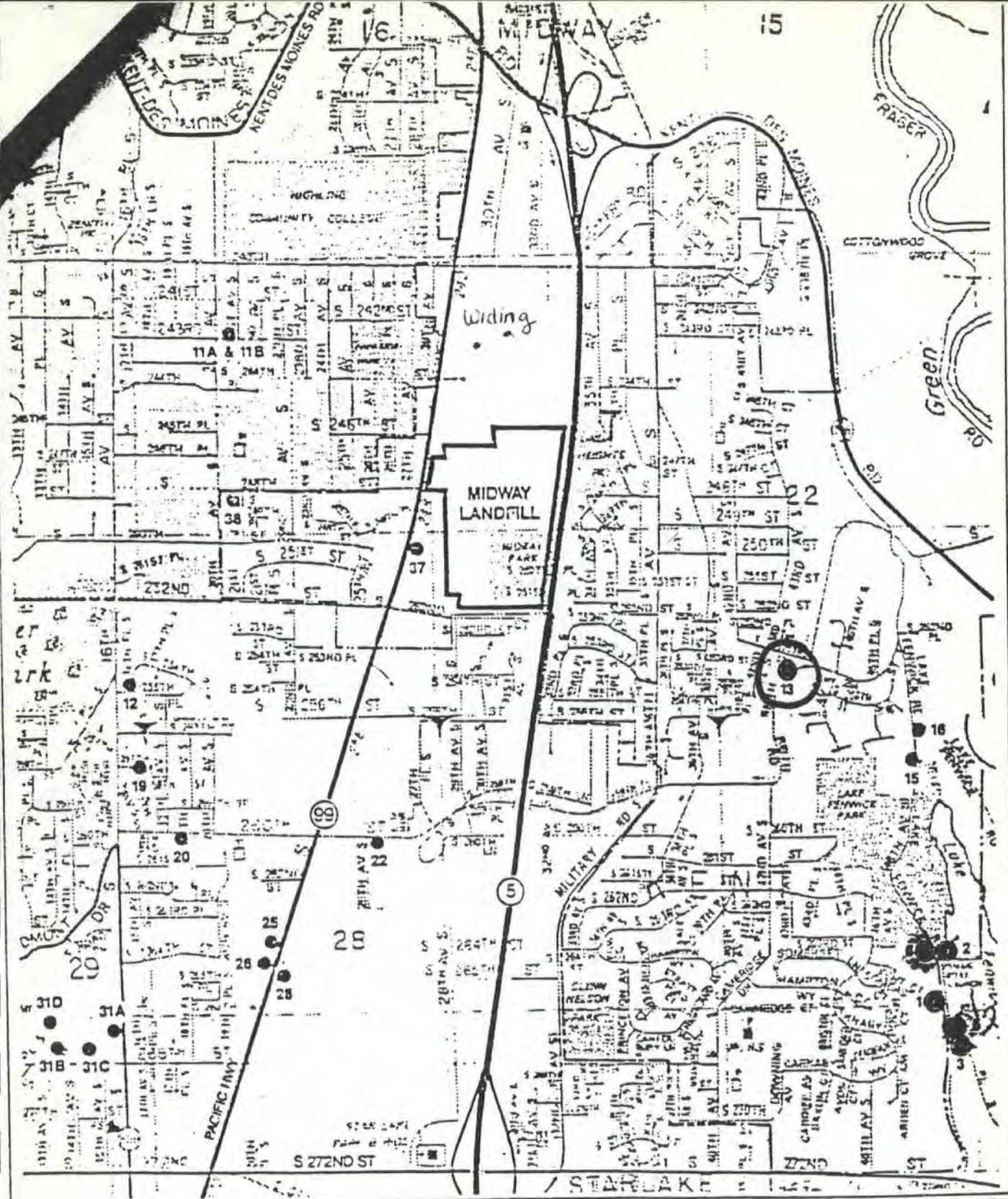
Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
VA01	Acetone	ppb				14.00	10.00<
VA04	Benzene	ppb				1.00U	1.00<
VA05	Bromodichloromethane	ppb				1.00U	1.00<
VA06	Bromoform	ppb				5.00U	5.00<
VA07	Bromoethane	ppb				10.00U	10.00<
VA08	2-Butanone	ppb				10.00U	10.00<
VA09	Carbon Disulfide	ppb				1.00U	1.00<
VA10	Carbon Tetrachloride	ppb				1.00U	1.00<
VA11	Chlorobenzene	ppb				1.00U	1.00<
VA12	Chloroethane	ppb				1.00U	1.00<
VA13	2-Chloroethylvinyl ether ...	ppb				10.00U	10.00<
VA14	Chloroform	ppb				1.00U	1.00<
VA15	Chloromethane	ppb				10.00U	10.00<
VA16	Dibromochloromethane	ppb				1.00U	1.00<
VA17	1,1-Dichloroethane	ppb				1.00U	1.00<
VA18	1,2-Dichloroethane	ppb				1.00U	1.00<
VA19	1,1-Dichloroethene	ppb				1.00U	1.00<
VA20	trans-1,2-Dichloroethene ...	ppb				1.00U	1.00<
VA21	1,2-Dichloropropane	ppb				1.00U	1.00<
VA22	cis-1,3-Dichloropropene	ppb				1.00U	1.00<
VA23	trans-1,3-Dichloropropene ..	ppb				1.00U	1.00<
VA24	Ethylbenzene	ppb				1.00U	1.00<
VA25	2-Hexanone	ppb				10.00U	10.00<
VA26	Methylene Chloride	ppb				5.00U	5.00<
VA27	4-Methyl-2-pentanone	ppb				10.00U	10.00<
VA28	Styrene	ppb				1.00U	1.00<
VA29	1,1,2,2-Tetrachloroethane ..	ppb				1.00U	1.00<
VA30	Tetrachloroethene (PCE)	ppb				1.00U	1.00<
VA31	Toluene	ppb				1.00U	1.00<
VA32	1,1,1-Trichloroethane	ppb				1.00U	1.00<
VA33	1,1,2-Trichloroethane	ppb				1.00U	1.00<
VA34	Trichloroethene (TCE)	ppb				1.00U	1.00<
VA35	Vinyl Acetate	ppb				10.00U	10.00<
VA36	Vinyl Chloride	ppb				1.00U	1.00<
VA37	Xylenes (Total)	ppb				1.00U	1.00<

Parametrix Inc. -- Environmental Data System
GROUNDWATER REPORT - THRU ROUND 5

12
Pa

Station: ATI MW-28 Name: MONITORING WELL #28

Par#	Parameter Name	Units	RND-01	RND-02	RND-03	RND-04	RND-05
QA01	(BN) Nitrobenzene-D5	%Rec					
QA02	(BN) 2-Fluorobiphenyl	%Rec				53.0	55.0
QA03	Dibutylchloroendate(PP).....	%Rec				67.0	62.0
QA04	1,2-Dichloroethane-D4 (VA)...	%Rec				86.0	69.0
QA05	Bromofluorobenzene (VA)....	%Rec				97.0	93.0
QA06	Toluene-D6 (VA).....	%Rec				97.0	100.0
QA08	Terphenyl (BN).....	%Rec				102.0	
QA09	Phenol-D5 (AC).....	%Rec				82.0	80.0
QA10	2-Fluorophenol (AC).....	%Rec				33.0	47.0
QA11	2,4,6-Tribromophenol.....	%Rec				33.0	46.0
QA14	TOLUENE (DB).....	%Rec				31.0	68.0
							100.0



- Wells Presently Being Used for Human Drinking Supplies
- Wells Not Currently in Use for Human Drinking Supplies

Figure 2. Private wells, being utilized or capable of being utilized that are located within a one mile radius of the landfill site.

Table H-1. Public and Private Wells in the vicinity of the Midway Landfill Site.

Well #1	Owner/Property Address	Location	Information ² Level	Well Depth (ft)	Depth to Water (ft)	Present Use	Condition
1	(b) (6) 26605 Lake Fenwick Rd. Kent, WA	T22N R4E Sec. 27 1/4NW 1/4NE	A	137	79	Private (1 home)	Operating
2	(b) (6) 26416 Lake Fenwick Rd. Kent, WA	T22N R4E Sec. 27 1/4SE 1/4NE	A	39	17	Private (1 home)	Operating
3	(b) (6) 26724 51st Pl. S. Kent, WA	T22N R4E Sec. 27 1/4SE 1/4NE	A	30	6	Domestic (1 home)	Operating
5	Hayett Water System 26612 Lake Fenwick Rd. Kent, WA	T22N R4E Sec. 27 1/4NE 1/4SE	A	84	43	Private (2 homes)	Operating
6	Lake Fenwick Supply 26425 Lake Fenwick Rd. Kent, WA	T22N R4E Sec. 27 1/4SE 1/4NE	B	165		Private (9 homes)	Operating
11A	(b) (6) 24135 21st Ave. So. Kent, WA	T22N R4E Sec. 21 1/4NE 1/4NW	B	36 (Dug)	9	Unused	Covered Operable
11B	(b) (6) 24131 21st Ave. S. Kent, WA	T22N R4E Sec. 21 1/4NE 1/4NW	B	(Dug)		Unused	Unknown
12	25401 16th Pl. S.	T22N R4E Sec. 21 1/4SW 1/4SW	C	125	3	Unused	Unknown
13	(b) (6) 4436 Reith Rd. Kent, WA	T22N R4E Sec. 22 1/4SW 1/4SE	C	160	50	Private (1 home)	Operating

SUMMARY SHEET FOR: (b) (6) (Private Well)

Total Boring Depth: 180 feet; and Bottom Elevation: 80 feet (MSL)

	<u>Sampling Round</u>			
	<u>No. 1</u> ^a	<u>No. 2</u>	<u>No. 3</u>	<u>No. 4</u>
<u>Conventional Parameters (ppm):</u>				
BIOCHEMICAL OXYGEN DEMAND	<2			
CHEMICAL OXYGEN DEMAND	5			
CYANIDE	<0.01			
SULFATE	20.5			
SULFIDE	<0.05			
NITRATE as NITROGEN	1.8			
NITRITE as NITROGEN	<0.05			
AMMONIA as NITROGEN	<0.05			
TOTAL KJELDAHL NITROGEN	0.16			
CHLORIDE	4.1			
FLUORIDE	<0.5			
TOTAL DISSOLVED SOLIDS	240			
HARDNESS	149			
ALKALINITY	199			
CARBONATE	<5			
BICARBONATE	199			
TOTAL ORGANIC CARBON	0.5			
TOTAL ORGANIC HALIDES	<0.008			
TOTAL COLIFORM COUNT (MPN/100ml)	4			

Metals (ppm):

ZINC	0.16
NICKEL	0.02
CHROMIUM	0.04
COPPER	<0.02
SILVER	<0.05
BERYLLIUM	<0.02
BORON	<0.5
CALCIUM	34.7
MAGNESIUM	36.1
SODIUM	10.7
POTASSIUM	2.6
IRON	0.17
MANGANESE	0.01
ANTIMONY	<0.002
ARSENIC	<0.002
SELENIUM	<0.002
LEAD	<0.002
CADMIUM	<0.0004
THALLIUM	<0.002
MERCURY	<0.0005

SUMMARY SHEET FOR: (b) (6) Well (Cont.)

	<u>No. 1</u>	<u>Sampling Round</u> <u>No. 2</u>	<u>No. 3</u>	<u>No. 4</u>
<u>Pesticides and PCBs:</u>	None			
	Detected			

Volatile Organic Compounds (ppb):Semi-Volatile Organic Compounds (ppb):

Notes: MSL = mean sea level elevation
ppm = parts per million (mg/L)
ppb = parts per billion (ug/L)
20(10) = "amount found in sample" followed by
(amount found in laboratory reagent blank)
tr = trace; not quantifiable

^a Round No. 1 conducted in December 1986.

Table 1. Metals and conventional results for soil samples (mg/kg (ppm) unless otherwise noted). All samples were analyzed on a dry weight basis. Samples were collected on June 3 and 4, 1987.

PARAMETER	S0-1	S0-2	S0-3	S0-4	S0-5	SITES	S0-7	S0-8	S0-9	S0-10	S0-10D	S0-11
						S0-6						
Zinc	24.9	108	24.9	1250	41.2	128	142	161	66.1	70.0E	99.8E	33.2
Nickel	19.9E	24.9E	16.4E	30.6E	15.1E	25.0E	20.5E	21.4E	26.2E	38.3E	18.3E	29.2E
Chromium	20.8	28.2	20.0	<1.4	15.1	21.1	15.9	18.7	25.8	15.6E	31.3E	42.4
Copper	15.6	22.0	4.3	693	11.8	164	22.1	22.7	16.0	46.1	56.7	5.3
Silver	<5.7	<4.6	<3.2	<7.0	<3.4	<3.2	<2.8	<2.8	<4.4	<15	<6.0	<3.5
Beryllium	<2.3	<1.8	<1.3	<2.8	<1.4	<1.3	<1.1	<1.1	<1.7	<6.0	<6.0	<1.4
Arsenic	8.2	26.3	12.3	600	18.6	18.9	20.4	23.9	15.7	38.9E	21.8E	8.4
Cadmium	<0.4	0.7	<0.3	3.6	0.4	0.4	0.3	1.5	0.9	<1.2DE	2.4E	<0.3
Lead	33.2	121	27.2	295	28.1	13.3	17.1	45.9	90.0	47.3E	181E	5.5
Antimony	<2.3	<1.8	<1.3	66.0	<1.4	<1.3	<1.1	<1.1	<1.7	<6.0	<6.0	<1.4
Selenium	<2.3	<1.8	<1.3	<2.8	<1.4	<1.3	<1.1	<1.1	<1.7	<6.0	<6.0	<1.4
Thallium	<2.3	<1.8	<1.3	<2.8	<1.4	<1.3	<1.1	<1.1	<1.7	<6.0	<6.0	<1.4
Mercury	<0.57	<0.46	<0.32	<0.7	<0.34	<0.32	<0.28	<0.28	<0.44	<1.5	<1.5	<0.35
pH (units)	7.74E	2.56E	2.74E	7.40E	6.43E	3.62E	2.76E	4.34E	5.59E	7.04E	2.56E	3.00E
Conductivity (umhos/cm)	210E	2140E	1280E	350E	164E	477E	885E	276E	168E	149E	1650E	940E
% Gravel	4.8	15.3	30.8	10.5	28.2	40.2	38.0	31.2	26.6	13.9	12.5	8.0
% Sand	80.3	72.0	56.7	47.3	55.8	48.9	54.3	59.3	60.8	36.1	36.7	42.0
% Clay & Silt	14.9	12.7	12.5	42.2	16.0	10.9	7.7	9.5	12.6	50.0	50.8	50.0
% Total Solids	36.5	44.1	79.5	28.6	72.9	92.3	89.2	92.0	60.4	15.5	13.8	79.6

E = The associated numerical value is an estimated quantity because quality control criteria were not met.

Table 2. Volatile organic results for soil samples. All units are mg/kg (ppm) dry weight. Samples were collected on June 3 and 4, 1987.

PARAMETER	SITES												
	S0-1	S0-2	S0-3	S0-4	S0-5	S0-6	S0-7	S0-8	S0-9	S0-10	S0-10-D	S0-11	S0-12
Chloromethane	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	U	U	U	U	U	U	U	U	U	U	U	U	U
Vinyl chloride	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U
Methylene Chloride	U	U	U	U	U	U	U	U	U	U	U	U	U
Acetone	U	U	5.5E	U	TRE	TRE	TRE	TRE	TRE	U	TRE	TRE	TRE
Carbon Disulfide	U	0.18	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U
Trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Butanone (MEK)	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U
Carbon Tetrachloride	U	U	U	U	U	U	U	U	U	U	U	U	U
Vinyl Acetate	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromodichloromethane	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	U	U	U	U	U	U	U	U	U	U	U	U	U
Trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	U	U	U	U	U	U	U	U	U	U	U	U	U
Dibromochloromethane	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U
Benzene	U	U	U	U	U	U	0.09	U	U	U	U	U	U
Cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethylvinylether	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Hexanone (MBK)	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-Pentanone (MIBK)	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	U	U	U	U	U	U	0.09	0.09	U	U	U	U	U
Toluene	U	0.18E	0.06E	U	U	U	U	U	0.01E	1.4E	2.2E	0.25E	U
Chlorobenzene	U	0.18	0.1	U	0.2	0.2	0.3	0.9	0.2	U	U	0.14	0.1
Ethylbenzene	U	U	U	U	U	U	U	U	U	U	U	U	U
Styrene	U	U	U	U	U	U	U	U	U	U	U	U	U
Total Xylenes	U	U	U	U	U	U	U	U	U	U	U	U	U

E = The associated numerical value is an estimated quantity because quality control criteria were not met.

Table 3. Semivolatile organic results for soil samples SO-1 through SO-12. All units are mg/kg (ppm) dry weight. Samples collected on June 3 and 4, 1987.

[illegible]

Table 3. (Continued).

PARAMETER	SITES												
	S0-1	S0-2	S0-3	S0-4	S0-5	S0-6	S0-7	S0-8	S0-9	S0-10	S0-10-D	S0-11	S0-12
4-Nitrophenol	U	U	U	U	U	U	U	U	U	U	U	U	U
Dibenzofuran	U	U	U	U	U	U	U	U	U	U	U	U	U
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U	U	U	U
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U	U	U	U
Diethylphthalate	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Chlorophenyl-Phenylether	U	U	U	U	U	U	U	U	U	U	U	U	U
Fluorene	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Nitroaniline	U	U	U	U	U	U	U	U	U	U	U	U	U
4,6-Dinitro-2-Methylphenol	U	U	U	U	U	U	U	U	U	U	U	U	U
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Bromophenyl-Phenylether	U	U	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U	U
Pentachlorophenol	U	U	U	U	U	U	U	1.2	U	U	U	U	U
Phenanthrene	U	U	U	U	U	U	U	TR	U	U	U	U	U
Anthracene	U	U	U	U	U	U	U	TR	U	U	U	U	U
Di-N-Butylphthalate	1.7	U	U	U	TR	0.50	0.30	TR	1.4	4.0	1.9	0.50	0.73
Fluoranthene	U	TR	U	TR	U	U	U	0.26	U	U	U	U	U
Benzidine	U	U	U	U	U	U	U	U	U	U	U	U	U
Pyrene	U	TR	U	U	U	U	U	TR	U	U	U	U	U
Butylbenzylphthalate	U	U	U	U	U	U	U	U	U	U	U	U	U
3,3-Dichlorobenzidine	U	U	U	U	U	U	U	U	U	U	U	U	U
Benzo(a)Anthracene	U	U	U	U	U	U	U	TR	U	U	U	U	U
Bis(2-Ethylhexyl)Phthalate	U	U	U	U	U	0.40	0.40	TR	U	U	0.50	U	U
Chrysene	U	U	U	U	U	U	U	0.25	U	U	U	U	U
Di-N-Octylphthalate	U	U	U	U	U	0.40	U	U	U	U	U	U	U
Benzo(b)Fluoranthene	U	U	U	U	U	U	U	0.35*	U	U	U	U	U
Benzo(k)Fluoranthene	U	U	U	U	U	U	U	NT	U	U	U	U	U
Benzo(a)Pyrene	U	U	U	U	U	U	U	0.20	U	U	U	U	U
Indeno(1,2,3-cd)Pyrene	U	U	U	U	U	U	U	U	U	U	U	U	U
Dibenz(a,h)Anthracene	U	U	U	U	U	U	U	U	U	U	U	U	U
Benzo(g,h,i)Perylene	U	U	U	U	U	U	U	U	U	U	U	U	U

U = not detected

TR = trace

NT = not tested

*reported as total benzofluoranthenes, isomers could not be resolved

Table 5. Pesticide and PCB results for soil samples. All units are mg/kg (ppm) dry weight. Samples were collected on June 3 and 4, 1987.

PARAMETERS	SITES											
	S0-1	S0-2	S0-3	S0-4	S0-5	S0-6	S0-7	S0-8	S0-9	S0-10	S0-10D	S0-11
Aldrin	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Alpha-BHC	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Beta-BHC	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Gamma-BHC (Lindane)	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Delta-BHC	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Chlordane	U	U	U	U	U	U	U	U	U	U DE	U	U DE
4,4'-DDD	U	U	U	U	U	U	U	U	U	U DE	U	U DE
4,4'-DDE	U	U	U	U	U	U	U	U	U	U DE	U	U DE
4,4'-DDT	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Dieldrin	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Endosulfan I	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Endosulfan II	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Endosulfan Sulfate	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Endrin	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Endrin Aldehyde	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Heptachlor	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Heptachlor Epoxide	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Methoxychlor	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Toxaphene	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Arochlor 1016	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Arochlor 1221	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Arochlor 1232	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Arochlor 1242	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Arochlor 1248	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Arochlor 1254	U	U	U	U	U	U	U	U	U	U DE	U	U DE
Arochlor 1260	U	U	U	U	U	U	U	U	U	U DE	U	U DE

DE = The associated detection limit is an estimated quantity because quality control criteria were not met.

APPENDIX F

EPA TARGET COMPOUND LIST (TCL)

ANALYTICAL PROTOCOLS

The standardized organic analytical methods are based on Federal Register Methods 625 (B/N/A), 608 (pesticide), 624 (VOA), EPA Methods for Chemical Analysis of Water and Wastes (MCAWW), and Test Methods for Evaluating Solid Wastes (SW-846) modified for CLP use in the analysis of both water and soil samples.

TABLE F-1
ORGANICS ANALYSES

Volatile Compounds (VOA)	Contract Required Quantitation Limits *	
	Low Concentration Water ^a (ug/l)	Low Concentration Soil/Sediment ^b (ug/kg)
1. Chloromethane	10	10
2. Bromomethane	10	10
3. Vinyl Chloride	10	10
4. Chloroethane	10	10
5. Methylene Chloride	5	5
6. Acetone	10	10
7. Carbon Disulfide	5	5
8. 1,1-Dichloroethene	5	5
9. 1,1-Dichloroethane	5	5
10. trans-1,2-Dichloroethene	5	5
11. Chloroform	5	5
12. 1,2-Dichloroethane	5	5
13. 2-Butanone	10	10
14. 1,1,1-Trichloroethane	5	5
15. Carbon Tetrachloride	5	5
16. Vinyl Acetate	10	10
17. Bromodichloromethane	5	5
18. 1,2-Dichloropropane	5	5
19. trans-1,3-Dichloropropene	5	5
20. Trichloroethene	5	5
21. Dibromochloromethane	5	5
22. 1,1,2-Trichloroethane	5	5
23. Benzene	5	5
24. cis-1,3-Dichloropropene	5	5
25. 2-Chloroethylvinylether	10	10
26. Bromoform	5	5
27. 2-Hexanone	10	10
28. 4-Methyl-2-Pentanone	10	10
29. Tetrachloroethene	5	5
30. 1,1,2,2-Tetrachloroethane	5	5
31. Toluene	5	5
32. Chlorobenzene	5	5
33. Ethyl Benzene	5	5
34. Styrene	5	5
35. Total Xylenes	5	5

TABLE F-1 (CONT.)

Semi-Volatile Compounds (VOA)	Contract Required Quantitation Limits *	
	Low Concentration Water ^c (ug/l)	Low Concentration Soil/Sediment ^d (ug/kg)
1. Phenol	10	330
2. bis(-2-Chloroethyl)Ether	10	330
3. 2-Chlorophenol	10	330
4. 1,3-Dichlorobenzene	10	330
5. 1,4-Dichlorobenzene	10	330
6. Benzyl Alcohol	10	330
7. 1,2-Dichlorobenzene	10	330
8. 2-Methylphenol	10	330
9. bis(2-Chloroisopropyl)Ether	10	330
10. 4-Methylphenol	10	330
11. N-Nitroso-Di-n-propylamine	10	330
12. Hexachloroethane	10	330
13. Nitrobenzene	10	330
14. Isophorone	10	330
15. 2-Nitrophenol	10	330
16. 2,4-Dimethylphenol	10	330
17. Benzoic Acid	50	1600
18. bis(2-Chloroethoxy)Methane	10	330
19. 2,4-Dichlorophenol	10	330
20. 1,2,4-Trichlorobenzene	10	330
21. Naphthalene	10	330
22. 4-Chloroaniline	10	330
23. Hexachlorobutadiene	10	330
24. 4-Chloro-3-Methylphenol	10	330
25. 2-Methylnaphthalene	10	330
26. Hexachlorocyclopentadiene	10	330
27. 2,4,6-Trichlorophenol	10	330
28. 2,4,5-Trichlorophenol	50	1600
29. 2-Chloronaphthalene	10	330
30. 2-Nitroaniline	50	1600
31. Dimethyl Phthalate	10	330
32. Acenaphthylene	10	330
33. 3-Nitroaniline	50	1600
34. Acenaphthene	10	330
35. 2,4-Dinitrophenol	50	1600

TABLE F-1 (CONT.)

Semi-Volatile Compounds (VOA)	Contract Required Quantitation Limits *	
	Low Concentration Water ^c (ug/l)	Low Concentration Soil/Sediment ^d (ug/kg)
36. 4-Nitrophenol	50	1600
37. Dibenzofuran	10	330
38. 2,4-Dinitrotoluene	10	330
39. 2,6-Dinitrotoluene	10	330
40. Diethylphthalate	10	330
41. 4-Chlorophenyl-phenylether	10	330
42. Fluorene	10	330
43. 4-Nitroaniline	50	1600
44. 4,6-Dinitro-2-Methylphenol	50	1600
45. N-Nitrosodiphenylamine	10	330
46. 4-Bromophenyl-phenylether	10	330
47. Hexachlorobenzene	10	330
48. Pentachlorophenol	50	1600
49. Phenathrene	10	330
50. Anthracene	10	330
51. Di-n-Butylphthalate	10	330
52. Fluoranthene	10	330
53. Pyrene	10	330
54. Butylbenzylphthalate	10	330
55. 3,3'-Dichlorobenzidine	20	660
56. Benzo(a)Anthracene	10	330
57. bis(2-Ethylhexyl)Phthalate	10	330
58. Chrysene	10	330
59. Di-n-Octyl Phthalate	10	330
60. Benzo(b)Fluoranthene	10	330
61. Benzo(k)Fluoranthene	10	330
62. Benzo(a)Pyrene	10	330
63. Indeno(1,2,3-cd)Pyrene	10	330
64. Dibenz(a,h)Anthracene	10	330
65. Benzo(g,h,i)Perylene	10	330

TABLE F-1 (CONT.)

Pesticide / PCB Compounds	Contract Required Quantitation Limits *	
	Low Concentration Water ^e (ug/l)	Low Concentration Soil/Sediment ^f (ug/kg)
1. Alpha-BHC	.05	8
2. Beta-BHC	.05	8
3. Delta-BHC	.05	8
4. Gamma-BHC (Lindane)	.05	8
5. Heptachlor	.05	8
6. Aldrin	.05	8
7. Heptachlor Epoxide	.05	8
8. Endosulfan I	.05	8
9. Dieldrin	.1	16
10. 4,4'-DDE	.1	16
11. Endrin	.1	16
12. Endosulfan II	.1	16
13. 4,4'-DDD	.1	16
14. Endosulfan Sulfate	.1	16
15. 4,4'-DDT	.1	16
16. Methoxychlor	.5	80
17. Endrin Ketone	.1	16
18. Chlordane	.5	80
19. Toxaphene	1.0	160
20. AROCLOR-1016	.5	80
21. AROCLOR-1221	.5	80
22. AROCLOR-1232	.5	80
23. AROCLOR-1242	.5	80
24. AROCLOR-1248	.5	80
25. AROCLOR-1254	1.0	160
26. AROCLOR-1260	1.0	160

* Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

a Medium Water Contract Required Quantitation Limits (CRQL) for Volatile TCL Compounds are 100 times the individual Low Water CRQL.

b Medium Soil/Sediment Contract Required Quantitation Limits (CRQL) for Volatile TCL Compounds are 100 times the individual Low Soil/Sediment CRQL.

TABLE F-1 (CONT.)

- c Medium Water Contract Required Quantitation Limits (CRQL) for Semi-volatile TCL Compounds are 100 times the individual Low Water (CRQL).
- d Medium Soil/Sediment Contract Required Quantitation Limits (CRQL) for Semi-volatile TCL Compounds are 60 times the individual Low Soil/Sediment (CRQL).
- e Medium Water Contract Required Quantitation Limits (CRQL) for Pesticide/PCB TCL Compounds are 100 times the individual Low Water (CRQL).
- f Medium Soil/Sediment Contract Required Quantitation Limits (CRQL) for Pesticide/PCB TCL Compounds are 60 times the individual Low Soil/Sediment (CRQL).

TABLE F-2
INORGANIC ANALYSES

Element	Contract Required Quantitation Limits *
	Low Concentration Water (ug/l)
Aluminum	200
Antimony	60
Arsenic	10
Barium	200
Beryllium	5
Cadmium	5
Calcium	5000
Chromium	10
Cobalt	50
Copper	25
Iron	100
Lead	5
Magnesium	5000
Manganese	15
Mercury	0.2
Nickel	40
Potassium	5000
Selenium	5
Silver	10
Sodium	5000
Thallium	10
Vanadium	50
Zinc	20
Cyanide	10

* Specific detection limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

APPENDIX G

QUALITY ASSURANCE MEMORANDA AND ANALYTICAL RESULTS

Additional Information

Data tables included in this report may contain only those parameters pertinent to this site inspection. If a complete set of all data is required, including all undetected substances, please contact the U.S. Environmental Protection Agency, Region X, Superfund Branch, 1200 Sixth Avenue, Seattle, WA 98101. Requests should reference case, sample number, and site identification number.

Page No. 1
06/27/88

SAMPLE TRACKING REPORT
Ecology and Environment, Inc.
Seattle, Washington
Contract No.: 68-01-7347

SITE NAME	IDD NUMBER	PAGE NUMBER	EPA SAMPLE LAB NUMBER NUMBER	STREET NUMBER	SAMPLE DESCRIPTION	SAMPLE DATE	DATE SHIPPED	AIRBILL NUMBER	SAMPLE MATRIX	CGMC	PRES	ANALYSES REQUESTED	Q
WIDING	8706-08	9315	88164300	JD 285	11Z394 HW-38	04/11/88	04/12/88	2483962725	WATER	LOW	NONE	VOA/BNA/P SF	55
WIDING	8706-08	9315	88164300	MJB 831	11Z394 HW-38	04/11/88	04/12/88	2483962736	WATER	LOW	NONE	INORGANIC DA	56
WIDING	8706-08	9315	88164301	JD 286	11Z395 BACKGROUND	04/11/88	04/12/88	2483962725	SOIL	LOW	NONE	VOA/BNA/P SF	57
WIDING	8706-08	9315	88164301	MJB 832	11Z395 BACKGROUND	04/11/88	04/12/88	2483962736	SOIL	LOW	NONE	INORGANIC DA	58
WIDING	8706-08	9315	88164302	JD 287	11Z396 N. DITCH	04/11/88	04/12/88	2483962725	SOIL	LOW	NONE	VOA/BNA/P SF	59
WIDING	8706-08	9315	88164302	MJB 833	11Z396 N. DITCH	04/11/88	04/12/88	2483962736	SOIL	LOW	NONE	INORGANIC DA	60
WIDING	8706-08	9315	88164303	JD 288	11Z397 S. DITCH	04/11/88	04/12/88	2483962725	SOIL	LOW	NONE	VOA/BNA/P SF	61
WIDING	8706-08	9315	88164303	MJB 834	11Z397 S. DITCH	04/11/88	04/12/88	2483962736	SOIL	LOW	NONE	INORGANIC DA	62
WIDING	8706-08	9315	88164304	JD 289	11Z398 YARD	04/11/88	04/12/88	2483962725	SOIL	LOW	NONE	VOA/BNA/P SF	63
WIDING	8706-08	9315	88164304	MJB 835	11Z398 YARD	04/11/88	04/12/88	2483962736	SOIL	LOW	NONE	INORGANIC DA	64
WIDING	8706-08	9315	88164305	JD 290	11Z399 NE CORNER	04/11/88	04/12/88	2483962725	SOIL	LOW	NONE	VOA/BNA/P SF	65
WIDING	8706-08	9315	88164305	MJB 836	11Z399 NE CORNER	04/11/88	04/12/88	2483962736	SOIL	LOW	NONE	INORGANIC DA	66
WIDING	8706-08	9315	88164306	JD 291	11Z400 S. SIDE	04/11/88	04/12/88	2483962725	SOIL	LOW	NONE	VOA/BNA/P SF	67
WIDING	8706-08	9315	88164306	MJB 837	11Z400 S. SIDE	04/11/88	04/12/88	2483962736	SOIL	LOW	NONE	INORGANIC DA	68
WIDING	8706-08	9315	88164307	JD 292	11Z401 SE CORNER	04/11/88	04/12/88	2483962725	SOIL	LOW	NONE	VOA/BNA/P SF	69
WIDING	8706-08	9315	88164307	MJB 838	11Z401 SE CORNER	04/11/88	04/12/88	2483962736	SOIL	LOW	NONE	INORGANIC DA	70
WIDING	8706-08	9315	88164308	JD 293	11Z402 HW-1	04/11/88	04/12/88	2483962725	WATER	LOW	NONE	VOA/BNA/P SF	71
WIDING	8706-08	9315	88164308	MJB 839	11Z402 HW-1	04/11/88	04/12/88	2483962736	WATER	LOW	NONE	INORGANIC DA	72
WIDING	8706-08	9315	88164309	JD 294	N/A BLANK	04/12/88	04/12/88	2483962725	WATER	LOW	NONE	VOA/BNA/P SF	73
WIDING	8706-08	9315	88164309	MJB 840	N/A BLANK	04/12/88	04/12/88	2483962736	WATER	LOW	NONE	INORGANIC DA	74
WIDING	8706-08	9315	88194390	JD 402	11Z403 F. IMPOUND	05/03/88	05/06/88	7494705492	SOIL	LOW	NONE	VOA/BNA/P EC	75
WIDING	8706-08	9315	88194390	MJB 207	11Z403 F. IMPOUND	05/03/88	05/06/88	7494705481	SOIL	LOW	NONE	INORGANIC WI	76
WIDING	8706-08	9315	88194391	JD 404	11Z404 RANDOM #2	05/04/88	05/06/88	7494705492	SOIL	LOW	NONE	VOA/BNA/P EC	77
WIDING	8706-08	9315	88194391	MJB 208	11Z404 RANDOM #2	05/04/88	05/06/88	7494705481	SOIL	LOW	NONE	INORGANIC WI	78
WIDING	8706-08	9315	88194392	JD 405	11Z405 RANDOM #1	05/04/88	05/06/88	7494705492	SOIL	LOW	NONE	VOA/BNA/P EC	79
WIDING	8706-08	9315	88194392	MJB 209	11Z405 RANDOM #1	05/04/88	05/06/88	7494705481	SOIL	LOW	NONE	INORGANIC WI	80
WIDING	8706-08	9315	88194393	JD 406	11Z406 RANDOM #3	05/04/88	05/06/88	7494705492	SOIL	LOW	NONE	VOA/BNA/P EC	81
WIDING	8706-08	9315	88194393	MJB 210	11Z406 RANDOM #3	05/04/88	05/06/88	7494705481	SOIL	LOW	NONE	INORGANIC WI	82
WIDING	8706-08	9315	88194394	JD 407	11Z407 RANDOM #4	05/04/88	05/06/88	7494705492	SOIL	LOW	NONE	VOA/BNA/P EC	83
WIDING	8706-08	9315	88194394	MJB 211	11Z407 RANDOM #4	05/04/88	05/06/88	7494705481	SOIL	LOW	NONE	INORGANIC WI	84



ecology and environment, inc.

101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537

International Specialists in the Environment

MEMORANDUM

DATE: July 5, 1988

TO: John Osborn, FIT-RPO, USEPA, Region X

FOR: Joyce Crosson, RSCC, USEPA, Region X

THRU: Jeffrey Villnow, FIT-OM, E&E, Seattle

FROM: Roger McGinnis, Chemist, E&E, Seattle *Rmm*
Andrew Hafferty, Senior Chemist, E&E, Seattle *gah*

SUBJ: Revision to QA Memo of Case 9315 (Inorganics)
Widing Transportation

REF: TDD F10-8806-09
PAN F10Z063QAQ

CC: Raleigh Farlow, ESD-DPO, USEPA, Region X
Gerald Muth, DPO, USEPA, Region X Laboratory, Manchester
Keith Schwab, DPO, USEPA, Region VIII
William Glasser, HWD-SM, USEPA, Region X
Gloria Skinner, E&E, Seattle

Revised data sheets have been received from Datachem Laboratories for Case 9315 (Inorganics). These revised sheets with corrected mercury concentrations should replace all data sheets in the original QA memorandum of June 3, 1988. A copy of the cover page of the original memorandum is attached for reference.

Corrected mercury results are now ACCEPTABLE.

RM/AH:rls



ecology and environment, inc.

101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537

International Specialists in the Environment

MEMORANDUM

DATE: June 3, 1988

TO: John Osborn, FIT-RPO, USEPA, Region X

FOR: Joyce Crosson, RSCC, USEPA, Region X

THRU: Jeffrey Villnow, FIT-OM, E&E, Seattle *JV*

FROM: Roger McGinnis, Chemist, E&E, Seattle
~~ANDERSON, JR.~~ Senior Chemist, E&E, Seattle *900J*

SUBJ: QA of Case 9315 (Inorganics)
Widing Transportation

REF: TDD F10-8802-07
PAN F10Z054QAQ

CC: Raleigh Farlow, ESD-DPO, USEPA, Region X
Gerald Muth, DPO, USEPA, Region X Laboratory, Manchester
Keith Schwab, DPO, USEPA, Region VIII
William Glasser, ESD-PO, USEPA, Region X
Lynn Guilford, E&E, Seattle

The Quality Assurance review of 10 samples, Case 9315, collected from Widing Transportation has been completed. Three water and seven soil samples were analyzed at low level for TCL inorganics by Datachem Laboratories of Salt Lake city, Utah. The samples were numbered:

MJB-831 (water)	MJB-836
MJB-832	MJB-837
MJB-833	MJB-838
MJB-834	MJB-839 (water)
MJB-835	MJB-840 (water)

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control specifications outlined in IFB WA 87-K-025, IFB WA 87-K-026 and IFB WA 87-K-027.

1
INORGANIC ANALYSIS DATA SHEET

Lab Name: DATACHEM

Contract 68-W8-0015

MJ8831

Lab Code: DATAC

Case No: 9315

SAS No: NA

SDG No: MJ8831

Matrix (soil/water): WATER

Lab Sample ID: 0

Level (low/med): LOW

Date Received: 04/13/88

% Solids: 0 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Rm
6/24/88

CAS No	Analyte	Concentration	
7429-90-5	Aluminum	623	J
7440-36-0	Antimony	13.1	U
7440-38-2	Arsenic	1.6	U
7440-39-3	Barium	21.2	U
7440-41-7	Beryllium	0.60	U
7440-43-9	Cadmium	1.6	U
7440-70-2	Calcium	44800	
7440-47-3	Chromium	7.3	J
7440-48-4	Cobalt	5.3	U
7440-50-8	Copper	57.4	
7439-89-6	Iron	461	
7439-92-1	Lead	14.0	UJ
7439-95-4	Magnesium	27500	J
7439-96-5	Manganese	483	
7439-97-6	Mercury	0.88	
7440-02-0	Nickel	8.3	U
7440-09-7	Potassium	3720	J
7782-49-2	Selenium	1.5	UJ
7440-22-4	Silver	4.6	UJ
7440-23-5	Sodium	14500	
7440-28-0	Thallium	1.7	U
7440-62-2	Vanadium	4.9	J
7440-66-6	Zinc	12.6	UJ
	Cyanide	10.0	U

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

1
INORGANIC ANALYSIS DATA SHEET

MJBB32

Lab Name: DATACHEM

Contract 68-WB-0015

Lab Code: DATAC

Case No 9315

SAS No NA

SDG No MJBB31

Matrix (soil/water) SOIL

Lab Sample ID: 0

Level (low/med): LOW

Date Received: 04/13/88

% Solids: 86.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Run
6/24/88

CAS No.	Analyte	Concentration	C
7429-90-5	Aluminum	22700	
7440-36-0	Antimony	3.2	J
7440-38-2	Arsenic	5.4	
7440-39-3	Barium	110	
7440-41-7	Beryllium	0.23	J
7440-43-9	Cadmium	0.37	U
7440-70-2	Calcium	2380	
7440-47-3	Chromium	36.1	J
7440-48-4	Cobalt	11.2	
7440-50-8	Copper	16.6	
7439-89-6	Iron	20700	
7439-92-1	Lead	5.7	
7439-95-4	Magnesium	5600	
7439-96-5	Manganese	253	
7439-97-6	Mercury	0.06	U
7440-02-0	Nickel	48.6	
7440-09-7	Potassium	623	J
7782-49-2	Selenium	0.35	U
7440-22-4	Silver	1.1	U
7440-23-5	Sodium	52.8	U
7440-28-0	Thallium	0.45	J
7440-62-2	Vanadium	52.7	
7440-66-6	Zinc	54.7	
	Cyanide	0.58	U

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts: YES

Comments:

ROOTS

E ICP SERIAL DILUTION ANALYSIS IS OUTSIDE THE CONTROL LIMIT.

1
INORGANIC ANALYSIS DATA SHEET

MJ8833

Lab Name: DATACHEM

Contract: 68-WB-0015

Lab Code: DATAC

Case No 9315

SAS No : NA

SDG No : MJ8831

Matrix (soil/water): SOIL

Lab Sample ID: 0

Level (low/med): LOW

Date Received: 04/13/88

% Solids: 88.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

rum
6/24/88

CAS No	Analyte	Concentration	C
7429-90-5	Aluminum	16200	
7440-36-0	Antimony	3.0	U J
7440-38-2	Arsenic	6.4	
7440-39-3	Barium	71.3	
7440-41-7	Beryllium	0.23	J
7440-43-9	Cadmium	1.0	
7440-70-2	Calcium	4570	
7440-47-3	Chromium	38.1	J
7440-48-4	Cobalt	9.5	J
7440-50-8	Copper	71.7	
7439-89-6	Iron	18500	
7439-92-1	Lead	24.2	
7439-95-4	Magnesium	5080	
7439-96-5	Manganese	305	
7439-97-6	Mercury	0.06	U
7440-02-0	Nickel	34.1	
7440-09-7	Potassium	244	J
7782-49-2	Selenium	0.34	U
7440-22-4	Silver	1.0	U
7440-23-5	Sodium	378	J
7440-28-0	Thallium	0.39	J
7440-62-2	Vanadium	54.2	
7440-66-6	Zinc	91.9	
	Cyanide	0.57	U

Color Before: BROWN

Clarity Before:

Texture: COURSE

Color After: YELLOW

Clarity After:

Artifacts: YES

Comments:

ROOTS

E ICP SERIAL DILUTION ANALYSIS IS OUTSIDE THE CONTROL LIMIT.

1
INORGANIC ANALYSIS DATA SHEET

MJ8834

Lab Name: DATACHEM

Contract 68-W8-0015

Lab Code: DATAC

Case No 9315

SAS No : NA

SDG No.: MJ8831

Matrix (soil/water) SOIL

Lab Sample ID: 0

Level (low/med): LOW

Date Received: 04/13/88

% Solids: 82.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Rm
6/24/88

CAS No	Analyte	Concentration	C
7429-90-5	Aluminum	17300	
7440-36-0	Antimony	3.2	J
7440-38-2	Arsenic	6.4	
7440-39-3	Barium	84.2	
7440-41-7	Beryllium	0.24	J
7440-43-9	Cadmium	0.64	J
7440-70-2	Calcium	3300	
7440-47-3	Chromium	52.5	J
7440-48-4	Cobalt	8.0	J
7440-50-8	Copper	137	
7439-89-6	Iron	18500	
7439-92-1	Lead	72.0	
7439-95-4	Magnesium	4040	
7439-96-5	Manganese	240	
7439-97-6	Mercury	0.06	U
7440-02-0	Nickel	34.7	
7440-09-7	Potassium	534	J
7782-49-2	Selenium	0.36	U
7440-22-4	Silver	1.1	U
7440-23-5	Sodium	180	J
7440-28-0	Thallium	0.41	U
7440-62-2	Vanadium	52.8	
7440-66-6	Zinc	84.7	
	Cyanide	0.60	U

Color Before: BROWN

Clarity Before:

Texture: COURSE

Color After: YELLOW

Clarity After:

Artifacts: YES

Comments:

ROOTS

E ICP SERIAL DILUTION ANALYSIS IS OUTSIDE THE CONTROL LIMIT.

1
INORGANIC ANALYSIS DATA SHEET

MJ8835

Lab Name: DATACHEM

Contract 68-WB-0015

Lab Code: DATAC

Case No 9315

SAS No: NA

SDG No: MJ8831

Matrix (soil/water) SOIL

Lab Sample ID: 0

Level (low/med): LOW

Date Received: 04/13/88

% Solids: 84.8

Run
6/21/88

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C
7429-90-5	Aluminum	24100	
7440-36-0	Antimony	4.1	J
7440-38-2	Arsenic	9.2	
7440-39-3	Barium	129	
7440-41-7	Beryllium	0.38	J
7440-43-9	Cadmium	0.38	U
7440-70-2	Calcium	2550	
7440-47-3	Chromium	29.8	J
7440-48-4	Cobalt	9.0	J
7440-50-8	Copper	20.5	
7439-89-6	Iron	19000	
7439-92-1	Lead	19.8	
7439-95-4	Magnesium	3940	
7439-96-5	Manganese	483	
7439-97-6	Mercury	0.06	U
7440-02-0	Nickel	36.6	
7440-09-7	Potassium	215	J
7782-49-2	Selenium	0.35	U
7440-22-4	Silver	1.1	U
7440-23-5	Sodium	54.0	U
7440-28-0	Thallium	0.40	J
7440-62-2	Vanadium	47.9	
7440-66-6	Zinc	47.1	
	Cyanide	0.59	U

Color Before: BROWN

Clarity Before:

Texture: COURSE

Color After: YELLOW

Clarity After:

Artifacts: YES

Comments:

ROOTS

E ICP SERIAL DILUTION ANALYSIS IS OUTSIDE THE CONTROL LIMIT.

U S EPA - CLP

EPA SAMPLE NO.

1
INORGANIC ANALYSIS DATA SHEET

MJ8836

Lab Name: DATACHEM

Contract: 68-WB-0015

Lab Code: DATAC

Case No: 9315

SAS No: NA

SDG No: MJ8831

Matrix (soil/water): SOIL

Lab Sample ID: 0

Level (low/med): LOW

Date Received: 04/13/88

% Solids: 84.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No	Analyte	Concentration	C
7429-90-5	Aluminum	21300	
7440-36-0	Antimony	3.1	U J
7440-38-2	Arsenic	10.0	
7440-39-3	Barium	108	
7440-41-7	Beryllium	0.36	J
7440-43-9	Cadmium	0.38	U
7440-70-2	Calcium	2530	
7440-47-3	Chromium	43.8	J
7440-48-4	Cobalt	11.4	
7440-50-8	Copper	32.7	
7439-89-6	Iron	24900	
7439-92-1	Lead	11.6	
7439-95-4	Magnesium	5830	
7439-96-5	Manganese	311	
7439-97-6	Mercury	0.06	U
7440-02-0	Nickel	51.9	
7440-09-7	Potassium	430	J
7782-49-2	Selenium	0.36	U
7440-22-4	Silver	1.1	U
7440-23-5	Sodium	54.3	U
7440-28-0	Thallium	0.40	U
7440-62-2	Vanadium	60.5	
7440-66-6	Zinc	48.6	
	Cyanide	0.59	U

Color Before: BROWN

Clarity Before:

Texture: COURSE

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

E ICP SERIAL DILUTION ANALYSIS IS OUTSIDE THE CONTROL LIMIT.

U S EPA - CLP

EPA SAMPLE NO.

run
6/24/881
INORGANIC ANALYSIS DATA SHEET

MJ8837

Lab Name: DATACHEM

Contract 68-WB-0015

Lab Code: DATAC

Case No 9315

SAS No NA

SDG No: MJ8831

Matrix (soil/water): SOIL

Lab Sample ID: 0

Level (low/med): LOW

Date Received: 04/13/88

% Solids: 94.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C
7429-90-5	Aluminum	11400	
7440-36-0	Antimony	2.8	U J
7440-38-2	Arsenic	4.5	
7440-39-3	Barium	52.3	
7440-41-7	Beryllium	0.13	U
7440-43-9	Cadmium	0.34	U
7440-70-2	Calcium	3980	
7440-47-3	Chromium	24.6	J
7440-48-4	Cobalt	7.3	J
7440-50-8	Copper	19.5	
7439-89-6	Iron	14900	
7439-92-1	Lead	27.3	
7439-95-4	Magnesium	3730	
7439-96-5	Manganese	227	
7439-97-6	Mercury	0.05	U
7440-02-0	Nickel	24.5	
7440-09-7	Potassium	362	J
7782-49-2	Selenium	0.32	U
7440-22-4	Silver	0.97	U
7440-23-5	Sodium	160	J
7440-28-0	Thallium	0.36	U
7440-62-2	Vanadium	42.1	
7440-66-6	Zinc	42.5	
	Cyanide	0.53	U

Color Before: BROWN

Clarity Before:

Texture: COURSE

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

E ICP SERIAL DILUTION ANALYSIS IS OUTSIDE THE CONTROL LIMIT

1
INORGANIC ANALYSIS DATA SHEET

MJ8838

Run
6/24/88

Lab Name: DATACHEM

Contract: 68-W8-0015

Lab Code: DATAC

Case No 9315

SAS No NA

SDG No: MJ8831

Matrix (soil/water): SOIL

Lab Sample ID: 0

Level (low/med): LOW

Date Received: 04/13/88

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No	Analyte	Concentration	C
7429-90-5	Aluminum	16600	
7440-36-0	Antimony	2.8	U J
7440-38-2	Arsenic	6.3	
7440-39-3	Barium	77.9	
7440-41-7	Beryllium	0.21	J
7440-43-9	Cadmium	0.35	U
7440-70-2	Calcium	3040	
7440-47-3	Chromium	27.3	J
7440-48-4	Cobalt	8.9	J
7440-50-8	Copper	26.4	
7439-89-6	Iron	18700	
7439-92-1	Lead	17.8	
7439-95-4	Magnesium	4650	
7439-96-5	Manganese	256	
7439-97-6	Mercury	0.05	U
7440-02-0	Nickel	33.4	
7440-09-7	Potassium	403	J
7782-49-2	Selenium	0.33	U
7440-22-4	Silver	1.0	U
7440-23-5	Sodium	101	J
7440-28-0	Thallium	0.37	U
7440-62-2	Vanadium	48.6	
7440-66-6	Zinc	46.8	
	Cyanide	0.54	U

Color Before: BROWN

Clarity Before:

Texture: COURSE

Color After: YELLOW

Clarity After:

Artifacts: YES

Comments:

ROOTS

E ICP SERIAL DILUTION ANALYSIS IS OUTSIDE THE CONTROL LIMIT.

1
INORGANIC ANALYSIS DATA SHEET

Lab Name: DATACHEM

Contract 68-W8-0015

MJ8839

Lab Code: DATAC

Case No 9315

SAS No NA

SDG No: MJ8831

Run
6/24/88

Matrix (soil/water) WATER

Lab Sample ID: 0

Level (low/med): LOW

Date Received: 04/13/88

% Solids: 0 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No	Analyte	Concentration	C
7429-90-5	Aluminum	150	U J
7440-36-0	Antimony	13.1	U
7440-38-2	Arsenic	2.1	J
7440-39-3	Barium	21.2	U
7440-41-7	Beryllium	0.60	U
7440-43-9	Cadmium	1.6	U
7440-70-2	Calcium	14800	U
7440-47-3	Chromium	2.8	U
7440-48-4	Cobalt	5.3	U
7440-50-8	Copper	8.6	U
7439-89-6	Iron	80.4	U J
7439-92-1	Lead	7.4	U J
7439-95-4	Magnesium	6870	J
7439-96-5	Manganese	4.3	J
7439-97-6	Mercury	0.1	U
7440-02-0	Nickel	11.5	J
7440-09-7	Potassium	1630	J
7782-49-2	Selenium	1.5	U J
7440-22-4	Silver	4.6	U J
7440-23-5	Sodium	7710	U
7440-28-0	Thallium	1.7	U
7440-62-2	Vanadium	7.1	J
7440-66-6	Zinc	34.0	U J
	Cyanide	10.0	U

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

1
INORGANIC ANALYSIS DATA SHEET

MJ8840

Rum
6/24/88

Lab Name: DATACHEM

Contract: 68-WB-0015

Lab Code: DATAC

Case No: 9315

SAS No: NA

SDG No: MJ8831

Matrix (soil/water): WATER

Lab Sample ID: 0

Level (low/med): LOW

Date Received: 04/13/88

% Solids: 0 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No	Analyte	Concentration	C
7429-90-5	Aluminum	57.1	U J
7440-36-0	Antimony	13.1	U
7440-38-2	Arsenic	1.6	U
7440-39-3	Barium	21.2	U
7440-41-7	Beryllium	0.60	U
7440-43-9	Cadmium	1.6	U
7440-70-2	Calcium	27.3	U
7440-47-3	Chromium	2.8	U
7440-48-4	Cobalt	5.3	U
7440-50-8	Copper	8.6	U
7439-89-6	Iron	14.1	U
7439-92-1	Lead	3.7	U J
7439-95-4	Magnesium	28.8	U J
7439-96-5	Manganese	1.2	U J
7439-97-6	Mercury	0.1	U
7440-02-0	Nickel	8.3	U
7440-09-7	Potassium	451	U J
7782-49-2	Selenium	1.5	U J
7440-22-4	Silver	4.6	U J
7440-23-5	Sodium	608	U J
7440-28-0	Thallium	1.7	U
7440-62-2	Vanadium	4.4	U
7440-66-6	Zinc	8.1	U J
	Cyanide	10.0	U

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:



ecology and environment, inc.

101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537

International Specialists in the Environment

MEMORANDUM

DATE: June 24, 1988

TO: John Osborn, FIT-RPO, USEPA, Region X

FOR: Joyce Crosson, RSCC, USEPA, Region X

THRU: Jeffrey Villnow, FIT-OM, E&E, Seattle

FROM: Thomas Cammarata, Geochemist, E&E, Seattle T.C.
Andrew Hafferty, Senior Chemist, E&E, Seattle gnd

SUBJ: QA of Case 9504 (Inorganics)
Widing Transportation

REF: F10-8802-07
PAN F10Z054QA

CC: Raleigh Farlow, ESD-DPO, USEPA, Region X
Gerald Muth, DPO, USEPA, Region X
Deborah Morey, DPO, USEPA, Region VII
Deborah Flood, HWD-SM, USEPA, Region X
Joseph Hunt, E&E, Seattle

The Quality Assurance review of five samples, Case 9504, collected from Widing Transportation, has been completed. Five soil samples were analyzed at low level for TCL inorganics by Wilson Laboratories of Salina, Kansas. The samples were numbered:

MJB207
MJB208

MJB209
MJB210

MJB211

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control specifications outlined in IFB WA87K025-027.

1) Timeliness - Acceptable

QA of Case 9405 (Inorganics)
Page 2

Sample Number	Sample Date	Recd. Date	ICP Anal.	AA Anal	Hg Prep.	CN Prep.
MJB207	5/4/88	5/7/88	5/26/88	6/5-8/88	5/20/88	5/12/88
MJB208	5/4/88	5/7/88	5/26/88	6/5-8/88	5/20/88	5/12/88
MJB209	5/4/88	5/7/88	5/26/88	6/5-8/88	5/20/88	5/12/88
MJB210	5/4/88	5/7/88	5/26/88	6/5-8/88	5/20/88	5/12/88
MJB211	5/4/88	5/7/88	5/26/88	6/5-8/88	5/20/88	5/12/88

All holding times were within QC limits.

2) Initial Calibration - Acceptable

Percent recoveries for all initial calibration elements were within QC limits.

3) Continuing Calibration - Acceptable

Percent recoveries for all continuing calibration elements were within QC limits.

4) Instrument Detection Limits - Acceptable

Instruments Detection Limits were below CRDL.

5) Blanks - Acceptable

All elements in the initial, continuing and preparation blanks were within QC limits.

6) ICP Interference Check - Acceptable

Percent recoveries for elements in the ICP interference check sample were within QC limits.

7) Laboratory Control Sample - Acceptable

Percent recoveries for elements in the laboratory control sample were within QC limits.

8) Duplicate Sample Analysis - Acceptable

The Relative Percent Difference for duplicate analysis was within QC limit.

9) Spiked Sample Analysis - Acceptable

All sample analysis had percent recoveries within QC limits.

10) ICP Serial Dilution - Acceptable

All elements in the ICP serial dilution had percent difference within QC limits.

11) Furnace AA

Pb and Tl in three samples had Percent Recoveries outside QC limits

Sample	Matrix	Element	%R	QC Limits
MJB209	Soil	*Pb	67	85-115%
MJB211	Soil	*Pb	72	85-115%
MJB209S	Soil	*Tl	40	85-115%

*MSA required

MSA Results:

Sample	Element	r	QC Limits
MJB209D	Pb	.9987	r > .995
MJB211	Pb	.9997	r > .995
MJB209S	Tl	.9931	r > .995
MJB209S	Tl	.9918	r > .995

Tl was flagged "J" in all appropriate samples because correlation coefficient were outside QC limits

12) Mercury Analysis - Acceptable

Mercury analysis met requirements specified in IFB WA 87-k-025, 026, and 027.

13) Cyanide Analysis - Acceptable

Cyanide analysis met requirements specified in IFB WA 87-K-025, 026, and 027.

14) Sample Analysis

Tl results were flagged "J" in all samples because the correlation coefficients were outside QC limits for MSA.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (R-582-5-5-01).

Upon consideration of the above comments, the data is ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of individual values.

This QA memorandum completes the series of QA reviews of CLP and/or EPA lab data for samples collected during the Site Inspection identified on the cover page under the heading: Widing Transportation.

Data Qualifiers

- U - The material was analyzed for, but was not detected. The associated numerical value is an estimated sample quantitation limit.
- J - The associated numerical value is an estimated quantity because quality control criteria were not met or concentrations reported were less than the CRQL.
- R - Quality Control indicates that data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.
- Q - No analytical result.
- N - Presumptive evidence of presence of material (tentative identification).
- B - The element was found in the laboratory blank as well as the sample.

1
INORGANIC ANALYSIS DATA SHEET

MJB207

Lab Name: WILSON LABORATORIES

Contract: 68-W8-0027

Lab Code: WILSON

Case No.: 9504

SAS No.:

SDG No.: MJB207

Matrix (soil/water): SOIL

Lab Sample ID: 88052341

Level (low/med): LOW

Date Received: 05/07/88

% Solids: 81.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	UI	Q
7429-90-5	Aluminum	17700		
7440-36-0	Antimony	11.5	UI	
7440-38-2	Arsenic	6.1		
7440-39-3	Barium	118		
7440-41-7	Beryllium	0.74	UI	
7440-43-9	Cadmium	1.2	UI	
7440-70-2	Calcium	4600		
7440-47-3	Chromium	41.8		
7440-48-4	Cobalt	17.0		
7440-50-8	Copper	31.0		
7439-89-6	Iron	28700		
7439-92-1	Lead	4.6		
7439-95-4	Magnesium	7810		
7439-96-5	Manganese	576		
7439-97-6	Mercury	0.10		
7440-02-0	Nickel	41.4		
7440-09-7	Potassium	746		
7782-49-2	Selenium	0.91	UI	
7440-22-4	Silver	24.5	UI	
7440-23-5	Sodium	358	UI	
7440-28-0	Thallium	13.2	UI	
7440-62-2	Vanadium	63.4		
7440-66-6	Zinc	53.6		
	Cyanide	0.61	UI	

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: BROWN

Clarity After:

Artifacts:

Comments:

Due to interferences Ag was diluted 1:10

T. C
6/20/88

U.S. EPA - CLP

EPA SAMPLE NO.

1
INORGANIC ANALYSIS DATA SHEET

MJB208

Lab Name: WILSON LABORATORIES

Contract: 68-W8-0027

Lab Code: WILSON

Case No.: 9504

SAS No.:

SDG No.: MJB207

Matrix (soil/water): SOIL

Lab Sample ID: 88052342

Level (low/med): LOW

Date Received: 05/07/88

% Solids: 91.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	Q	M
7429-90-5	Aluminum	9310		
7440-36-0	Antimony	10.2	UI	
7440-38-2	Arsenic	2.6		
7440-39-3	Barium	40.3		
7440-41-7	Beryllium	0.65	UI	
7440-43-9	Cadmium	1.1	UI	
7440-70-2	Calcium	3590		
7440-47-3	Chromium	25.1		
7440-48-4	Cobalt	5.2		J
7440-50-8	Copper	12.2		
7439-89-6	Iron	15000		
7439-92-1	Lead	3.1		
7439-95-4	Magnesium	4280		
7439-96-5	Manganese	231		
7439-97-6	Mercury	0.09		
7440-02-0	Nickel	25.0	J	
7440-09-7	Potassium	510		J
7782-49-2	Selenium	0.81	UI	
7440-22-4	Silver	10.9	UI	
7440-23-5	Sodium	318	UI	
7440-28-0	Thallium	1.2	UI	J
7440-62-2	Vanadium	37.7		
7440-66-6	Zinc	27.8		
	Cyanide	0.54	UI	

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: BROWN

Clarity After:

Artifacts: YES

Comments:

MJB208 CONTAINS SEVERAL STONES.
Due to interferences Ag was diluted 1:5

T.C
6/20/88

U.S. EPA - CLP

EPA SAMPLE NO.

1
INORGANIC ANALYSIS DATA SHEET

MJB209

Lab Name: WILSON LABORATORIES

Contract: 68-W8-0027

Lab Code: WILSON

Case No.: 9504

SAS No.:

SDG No.: MJB207

Matrix (soil/water): SOIL

Lab Sample ID: 88052343

Level (low/med): LOW

Date Received: 05/07/88

% Solids: 92.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	Q	IM
7429-90-5	Aluminum	8810		
7440-36-0	Antimony	10.2	UI	
7440-38-2	Arsenic	1.5		J
7440-39-3	Barium	38.2		J
7440-41-7	Beryllium	0.65	UI	
7440-43-9	Cadmium	1.1	UI	
7440-70-2	Calcium	3490		
7440-47-3	Chromium	22.2		
7440-48-4	Cobalt	4.8		J
7440-50-8	Copper	10.2		
7439-89-6	Iron	14400		
7439-92-1	Lead	1.5		
7439-95-4	Magnesium	3500		
7439-96-5	Manganese	230		
7439-97-6	Mercury	0.09	UI	
7440-02-0	Nickel	19.0		
7440-09-7	Potassium	475		J
7782-49-2	Selenium	0.80	UI	
7440-22-4	Silver	21.6	UI	
7440-23-5	Sodium	315	UI	
7440-28-0	Thallium	1.2	U	J
7440-62-2	Vanadium	37.5		
7440-66-6	Zinc	23.0		
	Cyanide	0.43	UI	

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: BROWN

Clarity After:

Artifacts: YES

Comments:

MJB209 CONTAINS SEVERAL STONES.

Due to interferences Ag was diluted 1:10

T.C
6/20/88

U.S. EPA - CLP

EPA SAMPLE NO.

1
INORGANIC ANALYSIS DATA SHEET

MJB210

Lab Name: WILSON LABORATORIES

Contract: 68-W8-0027

Lab Code: WILSON

Case No.: 9504

SAS No.:

SDG No.: MJB207

Matrix (soil/water): SOIL

Lab Sample ID: 88052344

Level (low/med): LOW

Date Received: 05/07/88

% Solids: 92.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	CI	Q
7429-90-5	Aluminum	8830		
7440-36-0	Antimony	10.1	UI	
7440-38-2	Arsenic	1.5		
7440-39-3	Barium	36.0		
7440-41-7	Beryllium	0.65	UI	
7440-43-9	Cadmium	1.1	UI	
7440-70-2	Calcium	3350		
7440-47-3	Chromium	55.6		
7440-48-4	Cobalt	5.5		
7440-50-8	Copper	10.5		
7439-89-6	Iron	14000		
7439-92-1	Lead	1.4		
7439-95-4	Magnesium	4560		
7439-96-5	Manganese	234		
7439-97-6	Mercury	0.08	UI	
7440-02-0	Nickel	30.9		
7440-09-7	Potassium	284		
7782-49-2	Selenium	0.80	UI	
7440-22-4	Silver	21.6	UI	
7440-23-5	Sodium	315	UI	
7440-28-0	Thallium	1.2	UI	
7440-62-2	Vanadium	37.1		
7440-66-6	Zinc	23.2		
	Cyanide	0.54	UI	

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: BROWN

Clarity After:

Artifacts: YES

Comments:

MJB210 CONTAINS SEVERAL STONES.

Due to interferences Ag was diluted 1:10

T¹C
6/20/88

U.S. EPA - CLP

EPA SAMPLE NO.

1
INORGANIC ANALYSIS DATA SHEET

MJB211

Lab Name: WILSON LABORATORIES

Contract: 68-W8-0027

Lab Code: WILSON

Case No.: 9504

SAS No.:

SDG No.: MJB207

Matrix (soil/water): SOIL

Lab Sample ID: 88052345

Level (low/med): LOW

Date Received: 05/07/88

% Solids: 93.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	UI	Q
7429-90-5	Aluminum	8530		
7440-36-0	Antimony	12.0		
7440-38-2	Arsenic	1.7		
7440-39-3	Barium	38.9		
7440-41-7	Beryllium	0.64	UI	
7440-43-9	Cadmium	1.1	UI	
7440-70-2	Calcium	4340		
7440-47-3	Chromium	29.2		
7440-48-4	Cobalt	5.9		
7440-50-8	Copper	8.3		
7439-89-6	Iron	13900		
7439-92-1	Lead	2.0		
7439-95-4	Magnesium	3620		
7439-96-5	Manganese	258		
7439-97-6	Mercury	0.09	UI	
7440-02-0	Nickel	22.8		
7440-09-7	Potassium	514		
7782-49-2	Selenium	0.79	UI	
7440-22-4	Silver	21.5	UI	
7440-23-5	Sodium	314		
7440-28-0	Thallium	1.2	UI	
7440-62-2	Vanadium	36.9		
7440-66-6	Zinc	22.0		
	Cyanide	0.54	UI	

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: BROWN

Clarity After:

Artifacts: YES

Comments:

MJB211 CONTAINS SEVERAL STONES.

Due to interferences Ag was diluted 1:10

T.C.
6/20/88



ecology and environment, inc.

101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537

International Specialists in the Environment

MEMORANDUM

DATE: June 3, 1988

TO: John Osborn, FIT-RPO, USEPA, Region X

FOR: Joyce Crosson, RSCC, USEPA, Region X

THRU: Jeffrey Villnow, FIT-OM, E&E, Seattle *Y*

FROM: Tracy D. Yerian, Chemist, E&E, Seattle *TDY*
Andrew Hafferty, Senior Chemist, E&E, Seattle *9/7/88*

SUBJ: QA of Case 9315 (Organics)
Widing Transportation

REF: TDD F10-8802-07-
PAN F10Z054QAQ

CC: Raleigh Farlow, DPO-ESD, USEPA, Region X
Gerald Muth, DPO, Region X Laboratory, Manchester
David Stockman, DPO, USEPA, Region VI
William Glasser, ESD-PO, USEPA, Region X
J.B. Hunt, FIT-PM, E&E, Seattle

The Quality Assurance review of 10 samples, Case 9315, collected from Widing Transportation, has been completed. The seven soil and three water samples were analyzed at low level for volatiles, semi-volatiles, and pesticides/PCBs by Keystone Environmental Resources, Inc. of Houston, Texas. The samples were numbered:

JD-285	JD-290
JD-286	JD-291
JD-287	JD-292
JD-288	JD-293
JD-289	JD-294

Samples JD-285, JD-293 and JD-294 were the water samples. Sample JD-293 underwent spike and duplicate spike analysis for the water matrix; sample JD-292 underwent spike and duplicate spike analysis for the soil matrix. Three volatile, three semivolatile and two pesticide laboratory blanks were analyzed with this case.

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control Specifications outlined in IFB WA-87-K236-238.

1) Timeliness - Acceptable

Sample Number	Sample Date	Rec'd Date	VOA Anal.	BNA Ext.	BNA Anal.	Pest Ext.	Pest Anal.
JD-285	04/11/88	04/13/88	04/22/88	04/13/88	04/27/88	04/13/88	05/03/88
JD-286	04/11/88	04/13/88	04/22/88	04/14/88	04/29/88	04/14/88	05/03/88
JD-287	04/11/88	04/13/88	04/22/88	04/14/88	04/29/88	04/14/88	05/03/88
JD-288	04/11/88	04/13/88	04/22/88	04/14/88	04/29/88	04/14/88	05/03/88
JD-289	04/11/88	04/13/88	04/22/88	04/14/88	04/29/88	04/14/88	05/03/88
JD-290	04/11/88	04/13/88	04/22/88	04/14/88	04/29/88	04/14/88	05/03/88
JD-291	04/11/88	04/13/88	04/22/88	04/14/88	04/29/88	04/14/88	05/03/88
JD-292	04/11/88	04/13/88	04/22/88	04/14/88	04/29/88	04/14/88	05/03/88
JD-293	04/11/88	04/13/88	04/23/88	04/13/88	04/27/88	04/13/88	05/03/88
JD-294	04/11/88	04/13/88	04/22/88	04/13/88	04/27/88	04/13/88	05/03/88

All samples met holding time criteria for semivolatile and pesticide analyses.

All samples exceeded holding time criteria for volatile analysis. QC criteria for volatiles is analysis within seven days of sampling date; sample JD-293 was analyzed 12 days after the sampling date and all other samples were analyzed 11 days after the sampling date.

All volatile data, by sample and fraction, was flagged 'J' (estimated quantity) or 'UJ' (adjusted quantitation limit) as appropriate.

2) Instrument Tuning - Acceptable

All tuning check compound mass abundances and ratios were within contract required limits for volatile and semivolatile analysis.

3) Initial Calibration - Acceptable

All SPCC compounds were within contract required limits for the initial calibration with average Relative Response Factors (RRFs) above 0.3 for volatiles (0.25 for bromoform) and 0.05 for semivolatiles. All CCC compounds were within contract required limits for the initial calibration with Percent Relative Standard Deviations below 30%.

All non-SPCC compounds had average Relative Response Factors of greater than 0.3 (0.25 for bromoform) in the initial volatile calibration or greater than 0.05 in the initial semivolatile calibration, except:

Date	Instrument	Compound	Fraction	RRF
04/22/88	4000	2-Butanone	VOA	0.042
04/21/88	51EF	2-Butanone	VOA	0.088
04/21/88	51EF	trans-1,3-Dichloropropene	VOA	0.282

These compounds were not detected in the samples. However, low response factors allow false non-detects to be reported; quantitation limits for compounds with response factors below 0.3 and above 0.05 were flagged 'UJ' and quantitation units for compounds with response factors below 0.05 were flagged 'UR' (rejected).

All non-CCC compounds had percent relative standard deviations less than or equal to than 30% for the initial semivolatile calibration, except:

Date	Instrument	Compound	Fraction	%RSD
04/25/88	4510	bis(2-Chloroethyl)ether	BNA	32.0
04/25/88	4510	4-Chloroaniline	BNA	42.0
04/25/88	4510	3-Nitroaniline	BNA	59.6

For samples associated with the corresponding calibration and TCL compounds listed above, sample quantitation limits were flagged 'UJ' (undetected, estimated quantitation limit), as a high relative standard deviation is indicative of poor system linearity.

4) Continuing Calibrations

Frequency criteria was met for continuing calibration analyses.

All SPCC compounds were above the contract required Relative Response Factors limits fo 0.3 for volatiles (0.25 for bromoform) and 0.05 for semivolatiles. All CCC compounds were below the contract required Relative Percent Difference limits of 25% for the volatile and semivolatile continuing calibrations.

All non-SPCC compounds had a Relative Response Factor of greater than 0.3 (0.25 for bromoform) for continuing volatile calibration or greater than 0.05 for continuing semivolatile calibration, except:

Date	Instrument	Compound	Fraction	RRF
04/22/88	51EF	2-Butanone	VOA	0.062
04/23/88	4000	2-Butanone	VOA	0.038

For samples associated with the corresponding calibration and the TCL compound listed above, quantitation limits were flagged as estimated (UJ) for RRF less than 0.3 and above 0.05. Quantitation limits for 2-butanone were rejected (UR) for RRF less than 0.05.

All non-CCC compounds had relative percent difference (%D) values for the continuing calibration less than or equal to 25%, except:

Date	Instrument	Compound	Fraction	%D
04/22/88	513F	Acetone	VOA	30.1
04/22/88	513F	2-Butanone	VOA	29.6
04/22/88	513F	4-Methyl-2-pentanone	VOA	29.5
04/22/88	513F	2-Hexanone	VOA	30.8

For samples associated with the corresponding calibration and TCL compounds listed above, positive results and quantitation limits were flagged as estimated (J or UJ).

5) Instrument Detection Limits - Acceptable

Instrument detections limits were not reported by the laboratory.

6) Blanks - Acceptable

Frequency criteria was met for laboratory blank analysis.

The following compounds were detected in laboratory blanks at levels above IDL, but below CRQL for TCL compounds:

Blank ID	Fraction	Compound	Concen- tration	CRQL mg/kg	1 Relevant Samples
VBLK	VOA	Methylene chloride	3J	5U	JD-285, JD-294
VBLK	VOA	Methylene chloride	7	5U	JD-293, JD-293MS, JD-293MSD
SBLK	BNA	bis(2-Ethylhexyl) phthalate	480	330U	JD-287, JD-288, JD-289, JD-290, JD-291, JD-292
SBLK	BNA	Di-n-butylphthalate	3J	10U	---

Reported levels of the above compounds in the samples were flagged 'UJ' (adjusted quantitation limit) if the concentrations were below ten times the concentrations found in the appropriate blank.

The following Tentatively Identified Compounds (TICs) were identified in the laboratory blanks:

Date	Blank ID	Fraction	Compound	RT	Concentration
04/27/88	SBLK	BNA	Ketone	5.08	13J
04/29/88	SBLK	BNA	3-Penten-2-one, 4-methyl-	3.35	150J
04/29/88	SBLK	BNA	Unknown	3.77	200J
04/29/88	SBLK	BNA	Unknown	4.50	13,000J
04/29/88	SBLK	BNA	Ketone	4.82	150J
04/29/88	SBLK	BNA	Unknown	6.65	210J
04/29/88	SBLK	BNA	Unknown	8.32	170J
05/03/88	SBLK	BNA	Ketone	4.30	11J

Reported levels of these compounds found in the samples were flagged 'UJ' (adjusted quantitation limit) if the reported concentration was less than five times the concentration found in the appropriate blank.

7) Pesticide Standards

a) Linearity - Acceptable

The evaluation standards met the contract required limits of less than 10% RSD for linearity.

b) DDT Retention Time - Acceptable

The retention time for DDT on the primary and secondary GC column met or exceeded 12 minutes for the standard runs.

c) Retention Time Windows - Acceptable

The retention time windows met the contract specifications.

d) Analytical Sequence - Acceptable

The analytical sequence met the contract required frequency and order.

e) 4,4'-DDT/Endrin Degradation - Acceptable

The percent breakdown for Endrin and DDT met the contract limit of 20% for the individual or combined breakdown totals.

f) Dibutylchlorendate Retention Time Shift - Acceptable

The Percent Difference calculated for the retention time of Dibutylchlorendate did not exceed 2% for the packed columns.

8) Surrogate Recovery - Acceptable

Recoveries (%R) for all surrogate compounds for volatile, semi-volatile and pesticide analyses met QC criteria, except:

Sample Number	Compound	Fraction	%R	QC Limits
JD-285	Phenol-d5	BNA	5	10 - 94
JD-285	2-Fluorophenol	BNA	1	21 - 100
JD-285	2,4,6-Tribromophenol	BNA	0	10 - 123

All three semivolatile acid surrogates demonstrated low recovery. Upon re-analysis on 5/3/88, these surrogates met recovery criteria. However, no acid fraction compounds were detected and the one base/neutral semivolatile detect was lost in the re-analysis, so the re-run was not included with these results. The semivolatile acid fraction results of sample JD-285 were flagged 'UJ' (not detected, adjusted quantitation limit).

9) Matrix Spike and Matrix Spike Duplicate - Acceptable

All Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Percent Recoveries (%Rs) met advisory QC guidelines, except:

Sample Number	Fraction	Compound	Matrix	%R	QC Limit
JD-293MSD	VOA	Toluene	Water	127	76 - 125
JD-293MS	Pest	4,4'-DDT	Water	0	38 - 127
JD-292MS	Pest	gamma-BHC	Soil	144	46 - 127
		Heptachlor	Soil	163	35 - 130
		Aldrin	Soil	163	34 - 132
		Dieldrin	Soil	158	31 - 134
		Endrin	Soil	143	42 - 139
		4,4'-DDT	Soil	144	23 - 134
JD-292MSD	Pest	gamma-BHC	Soil	146	46 - 127
		Heptachlor	Soil	158	35 - 130
		Aldrin	Soil	159	34 - 132
		Dieldrin	Soil	154	31 - 134

All Relative Percent Differences (RPDs) for the MS and MSD were within QC guidelines, except:

Sample Number	Fraction	Compound	Matrix	RPD	QC Criteria
JD-293	Pest	4,4'-DDT	Soil	-200%	27%

There were no detected pesticides or PCBs in samples JD-293 or JD-292; no action was taken based on matrix spike results.

10) Sample Analysis

All reported results above instrument detection limits but below Contract Required Quantitation Limit (CRQL) were flagged as estimated (J) on the Data Sheets.

All volatile results were flagged 'J' or 'UJ' (estimated quantity) based on sample holding times.

Methylene chloride detects in samples JD-285 and JD-294 and bis(2-ethylhexyl)phthalate results for samples JD-287 and JD-290 were flagged 'UJ' (non-detected, adjusted quantitation level) based on the level of blank contamination.

All acetone results for samples JD-286, JD-287, JD-288, JD-289, JD-290, JD-291 and JD-292 were flagged as estimated (J or UJ) based on continuing calibration criteria.

All 2-butanone quantitation limits were either qualified as estimated (UJ) or rejected (UJ) due to low calibrating response factors.

The semivolatile acid fraction of sample JD-285 was flagged as estimated (UJ) based on low surrogate recoveries.

11) Laboratory Contact

The laboratory was contacted on 6/2/88 regarding the volatile raw data; the question was resolved during the telephone conversation.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Organics and Pesticides/PCB Analyses" (R-582-5-5-01).

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of the individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

- U - The material was analyzed for, but was not detected. The associated numerical value is an estimated sample quantitation limit.
- J - The associated numerical value is an estimated quantity because quality control criteria were not met or concentrations reported were less than the CRQL.
- R - Quality Control indicates that data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.
- Q - No analytical result.
- N - Presumptive evidence of presence of material (tentative identification).
- B - The compound was found in the laboratory blank as well as the sample.
- M - Mass spectral criteria for positive identification were not met. However, in the opinion of the laboratory, the identification is correct based on the analyst's professional judgement.
- X - The reported result may be a combination of indistinguishable isomers.

ORG/9315

In Reference to Case No(s):

9315

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

lt call 2 June 88 at
1045 hrs not in
left message lab
to return call 99

Date of Call: 2 June 88

Laboratory Name: Keystone

Lab Contact: Thomas Osterman / Nancy Tutunjian ←

Region: X

Regional Contact: Andrew Hafferty

call back at
1100 hrs

Call Initiated By: Laboratory X Region

In reference to data for the following sample number(s):

JD 289

Summary of Questions/Issues Discussed:

Raw data for VOA analysis of sample JD 289 missing from
data package

Summary of Resolution:

will send data asap
lab called back at 1130 hrs 2 June noted that pages in report were
out of sequence - raw data for 289 commingled with data for 290
- checked package - lab was correct all data OK JJ

Signature

Date

2 June 88

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD285

Name: KEYSTONE ENV.Contract: 68-W8-0065Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) WATERLab Sample ID: 880405303Concentration: 5.0 (g/mL) MLLab File ID: EU04053V03Frequency: (low/med) LOWDate Received: 04/13/88

Preservation: not dec. _____

Date Analyzed: 04/22/88Container: (pack/cap) PACKDilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

74-87-3	Chloromethane	10	U	J
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	9	U	
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	5	U	
75-35-4	1,1-Dichloroethene	5	U	
75-34-3	1,1-Dichloroethane	5	U	
540-59-0	1,2-Dichloroethene (total)	5	U	
67-66-3	Chloroform	5	U	
107-06-2	1,2-Dichloroethane	5	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	5	U	
56-23-5	Carbon Tetrachloride	5	U	
108-05-4	Vinyl Acetate	10	U	
75-27-4	Bromodichloromethane	5	U	
78-87-5	1,2-Dichloropropane	5	U	
10061-01-5	cis-1,3-Dichloropropene	5	U	
79-01-6	Trichloroethene	5	U	
124-48-1	Dibromochloromethane	5	U	
79-00-5	1,1,2-Trichloroethane	5	U	
71-43-2	Benzene	5	U	
10061-02-6	trans-1,3-Dichloropropene	5	U	
75-25-2	Bromoform	5	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	5	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	5	U	
108-90-7	Chlorobenzene	5	U	
100-41-4	Ethylbenzene	5	U	
100-42-5	Styrene	5	U	
1330-20-7	Xylenes (total)	5	U	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE N

JD285

Name: KEYSTONE ENV.

Contract: 68-W8-0065

Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

ix: (soil/water) WATER

Lab Sample ID: 880405303

le wt/vol: 5.0 (g/mL) ML

Lab File ID: EU04053V03

i: (low/med) LOW

Date Received: 04/13/88

isture: not dec. _____

Date Analyzed: 04/22/88

an (pack/cap) PACK

Dilution Factor: 1.0

er TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

AS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
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000017

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD286

Name: KEYSTONE ENV.Contract: 68-W8-0065Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405304Sample wt/vol: 5.0 (g/mL) GLab File ID: 5E04053V04Level: (low/med) LOWDate Received: 04/13/88Moisture: not dec. 12Date Analyzed: 04/22/88Amount: (pack/cap) PACKDilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>		Q
74-87-3	Chloromethane	11	U	J
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	Methylene Chloride	15		
67-64-1	Acetone	15		
75-15-0	Carbon Disulfide	6	U	
75-35-4	1,1-Dichloroethene	6	U	
75-34-3	1,1-Dichloroethane	6	U	
540-59-0	1,2-Dichloroethene (total)	6	U	
67-66-3	Chloroform	6	U	
107-06-2	1,2-Dichloroethane	6	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	6	U	
56-23-5	Carbon Tetrachloride	6	U	
108-05-4	Vinyl Acetate	11	U	
75-27-4	Bromodichloromethane	6	U	
78-87-5	1,2-Dichloropropane	6	U	
10061-01-5	cis-1,3-Dichloropropene	6	U	
79-01-6	Trichloroethene	6	U	
124-48-1	Dibromochloromethane	6	U	
79-00-5	1,1,2-Trichloroethane	6	U	
71-43-2	Benzene	6	U	
10061-02-6	trans-1,3-Dichloropropene	6	U	
75-25-2	Bromoform	6	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	6	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	6	U	
108-90-7	Chlorobenzene	6	U	
100-41-4	Ethylbenzene	6	U	
100-42-5	Styrene	6	U	
1330-20-7	Xylenes (total)	6	U	✓

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD286

Name: KEYSTONE ENV.Contract: 68-W8-0065Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405304Weight/vol: 5.0 (g/mL) GLab File ID: 5E04053V04Concentration: (low/med) LOWDate Received: 04/13/88Moisture: not dec. 12Date Analyzed: 04/22/88Container: (pack/cap) PACKDilution Factor: 1.0Number of TICs found: 0CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

S NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD287

Name: KEYSTONE ENV.Contract: 68-WB-0065Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix (soil/water) SOILLab Sample ID: 880405305Conc. (g/mL) 5.0Lab File ID: SE04053V05Conc. (low/med) LOWDate Received: 04/13/88Disturbance: not dec. 11Date Analyzed: 04/22/88Pack (pack/cap) PACKDilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND			
74-87-3	Chloromethane	11	U	J
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	Methylene Chloride	21		
67-64-1	Acetone	18		
75-15-0	Carbon Disulfide	6	U	
75-35-4	1,1-Dichloroethene	6	U	
75-34-3	1,1-Dichloroethane	6	U	
540-59-0	1,2-Dichloroethene (total)	6	U	
67-66-3	Chloroform	6	U	
107-06-2	1,2-Dichloroethane	6	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	6	U	
56-23-5	Carbon Tetrachloride	6	U	
108-05-4	Vinyl Acetate	11	U	
75-27-4	Bromodichloromethane	6	U	
78-87-5	1,2-Dichloropropane	6	U	
10061-01-5	cis-1,3-Dichloropropene	6	U	
79-01-6	Trichloroethene	6	U	
124-48-1	Dibromochloromethane	6	U	
79-00-5	1,1,2-Trichloroethane	6	U	
71-43-2	Benzene	6	U	
10061-02-6	trans-1,3-Dichloropropene	6	U	
75-25-2	Bromoform	6	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	6	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	6	U	
108-90-7	Chlorobenzene	6	U	
100-41-4	Ethylbenzene	6	U	
100-42-5	Styrene	6	U	
1330-20-7	Xylenes (total)	6	U	

000032

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD287

Name: KEYSTONE ENV.Contract: 68-W8-0065Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix (soil/water) SOILLab Sample ID: 880405305Moisture wt/vol: 5.0 (g/mL) GLab File ID: 5E04053V05Concentration (low/med) LOWDate Received: 04/13/88Disturbance: not dec. 11Date Analyzed: 04/22/88Packaging (pack/cap) PACKDilution Factor: 1.0Number of TICs found: 0CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
-----	-----	-----	-----	-----

504
513
000033

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD288

Name: KEYSTONE ENV.Contract: 68-W8-0065Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix (soil/water) SOILLab Sample ID: 880405306Conc (ug/vol): 5.0 (g/mL) GLab File ID: 5E04053V06Temp (low/med) LOWDate Received: 04/13/88Moisture: not dec. 20Date Analyzed: 04/22/88Pack (pack/cap) PACKDilution Factor: 1.0

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Q

74-87-3	Chloromethane	13	U	↓
74-83-9	Bromomethane	13	U	
75-01-4	Vinyl Chloride	13	U	
75-00-3	Chloroethane	13	U	
75-09-2	Methylene Chloride	40		
67-64-1	Acetone	49		
75-15-0	Carbon Disulfide	6	U	
75-35-4	1,1-Dichloroethene	6	U	
75-34-3	1,1-Dichloroethane	6	U	
540-59-0	1,2-Dichloroethene (total)	6	U	
67-66-3	Chloroform	6	U	
107-06-2	1,2-Dichloroethane	6	U	
78-93-3	2-Butanone	13	U	
71-55-6	1,1,1-Trichloroethane	6	U	
56-23-5	Carbon Tetrachloride	6	U	
108-05-4	Vinyl Acetate	13	U	
75-27-4	Bromodichloromethane	6	U	
78-87-5	1,2-Dichloropropane	6	U	
10061-01-5	cis-1,3-Dichloropropene	6	U	↓
79-01-6	Trichloroethene	4	J	
124-48-1	Dibromochloromethane	6	U	↓
79-00-5	1,1,2-Trichloroethane	6	U	
71-43-2	Benzene	6	U	
10061-02-6	trans-1,3-Dichloropropene	6	U	
75-25-2	Bromoform	6	U	
108-10-1	4-Methyl-2-Pentanone	13	U	
591-78-6	2-Hexanone	13	U	
127-18-4	Tetrachloroethene	6	U	
79-34-5	1,1,2,2-Tetrachloroethane	13	U	
108-88-3	Toluene	6	U	
108-90-7	Chlorobenzene	6	U	
100-41-4	Ethylbenzene	6	U	
100-42-5	Styrene	6	U	
1330-20-7	Xylenes (total)	6	U	↓

000041

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD288

KEYSTONE ENV.

Contract: 68-W8-0065

Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

(soil/water) SOIL

Lab Sample ID: 880405306

Conc./vol: 5.0 (g/mL) G

Lab File ID: 5E04053V06

(low/med) LOW

Date Received: 04/13/88

Temperature: not dec. 20

Date Analyzed: 04/22/88

(pack/cap) PACK

Dilution Factor: 1.0

TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
75-69-4	METHANE, TRICHLOROFLUORO-	6.00	9	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD289

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405307Sample wt/vol: 5.0 (g/mL) GLab File ID: 5E04053V07Level: (low/med) LOWDate Received: 04/13/88% Moisture: not dec. 13Date Analyzed: 04/22/88Column: (pack/cap) PACKDilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>		Q
74-87-3	Chloromethane	11	U	J
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	Methylene Chloride	9		
67-64-1	Acetone	18		
75-15-0	Carbon Disulfide	6	U	
75-35-4	1,1-Dichloroethene	6	U	
75-34-3	1,1-Dichloroethane	6	U	
540-59-0	1,2-Dichloroethene (total)	6	U	
67-66-3	Chloroform	6	U	
107-06-2	1,2-Dichloroethane	6	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	6	U	
56-23-5	Carbon Tetrachloride	6	U	
108-05-4	Vinyl Acetate	11	U	
75-27-4	Bromodichloromethane	6	U	
78-87-5	1,2-Dichloropropane	6	U	
10061-01-5	cis-1,3-Dichloropropene	6	U	
79-01-6	Trichloroethene	6	U	
124-48-1	Dibromochloromethane	6	U	
79-00-5	1,1,2-Trichloroethane	6	U	
71-43-2	Benzene	6	U	
10061-02-6	trans-1,3-Dichloropropene	6	U	
75-25-2	Bromoform	6	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	6	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	6	U	
108-90-7	Chlorobenzene	6	U	
100-41-4	Ethylbenzene	6	U	
100-42-5	Styrene	6	U	
1330-20-7	Xylenes (total)	6	U	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE

JD289

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) SOIL Lab Sample ID: 880405307

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 5E04053V07

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. 13 Date Analyzed: 04/22/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD290

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) SOIL Lab Sample ID: 880405308

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 5E04053V08

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. 16 Date Analyzed: 04/22/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>		Q
74-87-3	-----Chloromethane	12	U	J
74-83-9	-----Bromomethane	12	U	
75-01-4	-----Vinyl Chloride	12	U	
75-00-3	-----Chloroethane	12	U	
75-09-2	-----Methylene Chloride	26		
67-64-1	-----Acetone	12	U	
75-15-0	-----Carbon Disulfide	6	U	
75-35-4	-----1,1-Dichloroethene	6	U	
75-34-3	-----1,1-Dichloroethane	6	U	
540-59-0	-----1,2-Dichloroethene (total)	6	U	
67-66-3	-----Chloroform	6	U	
107-06-2	-----1,2-Dichloroethane	6	U	
78-93-3	-----2-Butanone	12	U	
71-55-6	-----1,1,1-Trichloroethane	6	U	
56-23-5	-----Carbon Tetrachloride	6	U	
108-05-4	-----Vinyl Acetate	12	U	
75-27-4	-----Bromodichloromethane	6	U	
78-87-5	-----1,2-Dichloropropane	6	U	
10061-01-5	-----cis-1,3-Dichloropropene	6	U	
79-01-6	-----Trichloroethene	6	U	
124-48-1	-----Dibromochloromethane	6	U	
79-00-5	-----1,1,2-Trichloroethane	6	U	
71-43-2	-----Benzene	6	U	
10061-02-6	-----trans-1,3-Dichloropropene	6	U	
75-25-2	-----Bromoform	6	U	
108-10-1	-----4-Methyl-2-Pentanone	12	U	
591-78-6	-----2-Hexanone	12	U	
127-18-4	-----Tetrachloroethene	6	U	
79-34-5	-----1,1,2,2-Tetrachloroethane	12	U	
108-88-3	-----Toluene	6	U	
108-90-7	-----Chlorobenzene	6	U	
100-41-4	-----Ethylbenzene	6	U	
100-42-5	-----Styrene	6	U	
1330-20-7	-----Xylenes (total)	6	U	V

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE N

JD290

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) SOIL Lab Sample ID: 880405308

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 5E04053V08

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. 16 Date Analyzed: 04/22/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD291

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405309Sample wt/vol: 5.0 (g/mL) GLab File ID: 5E04053V09Level: (low/med) LOWDate Received: 04/13/88% Moisture: not dec. 5Date Analyzed: 04/22/88Column: (pack/cap) PACKDilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
74-87-3	-----Chloromethane	11	U J
74-83-9	-----Bromomethane	11	U
75-01-4	-----Vinyl Chloride	11	U
75-00-3	-----Chloroethane	11	U
75-09-2	-----Methylene Chloride	17	J
67-64-1	-----Acetone	10	J
75-15-0	-----Carbon Disulfide	5	U J
75-35-4	-----1,1-Dichloroethene	5	U
75-34-3	-----1,1-Dichloroethane	5	U
540-59-0	-----1,2-Dichloroethene (total)	5	U
67-66-3	-----Chloroform	5	U
107-06-2	-----1,2-Dichloroethane	5	U
78-93-3	-----2-Butanone	11	U
71-55-6	-----1,1,1-Trichloroethane	5	U
56-23-5	-----Carbon Tetrachloride	5	U
108-05-4	-----Vinyl Acetate	11	U
75-27-4	-----Bromodichloromethane	5	U
78-87-5	-----1,2-Dichloropropane	5	U
10061-01-5	-----cis-1,3-Dichloropropene	5	U
79-01-6	-----Trichloroethene	5	U
124-48-1	-----Dibromochloromethane	5	U
79-00-5	-----1,1,2-Trichloroethane	5	U
71-43-2	-----Benzene	5	U
10061-02-6	-----trans-1,3-Dichloropropene	5	U
75-25-2	-----Bromoform	5	U
108-10-1	-----4-Methyl-2-Pentanone	11	U
591-78-6	-----2-Hexanone	11	U
127-18-4	-----Tetrachloroethene	5	U
79-34-5	-----1,1,2,2-Tetrachloroethane	11	U
108-88-3	-----Toluene	5	U
108-90-7	-----Chlorobenzene	5	U
100-41-4	-----Ethylbenzene	5	U
100-42-5	-----Styrene	5	U
1330-20-7	-----Xylenes(total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE #

JD291

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065
Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285
Matrix: (soil/water) SOIL Lab Sample ID: 880405309
Sample wt/vol: 5.0 (g/mL) G Lab File ID: 5E04053V09
Level: (low/med) LOW Date Received: 04/13/88
% Moisture: not dec. 5 Date Analyzed: 04/22/88
Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
-----	-----	-----	-----	-----

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE N

JD292

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405310Sample wt/vol: 5.0 (g/mL) GLab File ID: 5E04053V10Level: (low/med) LOWDate Received: 04/13/88% Moisture: not dec. 9Date Analyzed: 04/22/88Column: (pack/cap) PACKDilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND		
74-87-3	Chloromethane	11	U 5
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	18	
67-64-1	Acetone	25	
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

JD292

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405310Sample wt/vol: 5.0 (g/mL) GLab File ID: 5E04053V10Level: (low/med) LOWDate Received: 04/13/88% Moisture: not dec. 9Date Analyzed: 04/22/88Column (pack/cap) PACKDilution Factor: 1.0Number TICs found: 0CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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-----	-----	-----	-----	-----

1504
5/13/88

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE N

JD293

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) WATERLab Sample ID: 880405313Sample wt/vol: 5.0 (g/mL) MLLab File ID: EU04053V13ZLevel: (low/med) LOWDate Received: 04/13/88

% Moisture: not dec. _____

Date Analyzed: 04/23/88Column: (pack/cap) PACKDilution Factor: 1.0

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
74-87-3	Chloromethane	10	U J
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U ✓
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	10	U J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U ✓

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

JD293

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) WATER Lab Sample ID: 880405313

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EU04053V13Z

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. _____ Date Analyzed: 04/23/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
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1A

EPA SAMPLE 1

VOLATILE ORGANICS ANALYSIS DATA SHEET

JD294

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) WATERLab Sample ID: 880405316Sample wt/vol: 5.0 (g/mL) MLLab File ID: EU04053V16Level: (low/med) LOWDate Received: 04/13/88

% Moisture: not dec. _____

Date Analyzed: 04/22/88Column: (pack/cap) PACKDilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
74-87-3	Chloromethane	10	U J
74-83-3	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE 1

JD294

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) WATERLab Sample ID: 880405316Sample wt/vol: 5.0 (g/mL) MLLab File ID: EU04053V16Level: (low/med) LOWDate Received: 04/13/88

% Moisture: not dec. _____

Date Analyzed: 04/22/88Column (pack/cap) PACKDilution Factor: 1.0Number TICs found: 0CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
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18
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD285

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065
 Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285
 Matrix: (soil/water) WATER Lab Sample ID: 880405303
 Sample wt/vol: 1000 (g/mL) ML Lab File ID: EU04053C03
 Level: (low/med) LOW Date Received: 04/13/88
 % Moisture: not dec. _____ dec. _____ Date Extracted: 04/13/88
 Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/27/88
 GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	UG/L	
108-95-2	Phenol	10	U	
111-44-4	bis(2-Chloroethyl)Ether	10	U	
95-57-8	2-Chlorophenol	10	U	J
541-73-1	1,3-Dichlorobenzene	10	U	
106-46-7	1,4-Dichlorobenzene	10	U	
100-51-6	Benzyl Alcohol	10	U	
95-50-1	1,2-Dichlorobenzene	10	U	
95-48-7	2-Methylphenol	10	U	J
108-60-1	bis(2-Chloroisopropyl)Ether	10	U	
106-44-5	4-Methylphenol	10	U	J
621-64-7	N-Nitroso-Di-n-Propylamine	10	U	
67-72-1	Hexachloroethane	10	U	
98-95-3	Nitrobenzene	10	U	
78-59-1	Isophorone	10	U	
88-75-5	2-Nitrophenol	10	U	J
105-67-9	2,4-Dimethylphenol	10	U	J
65-85-0	Benzoic Acid	50	U	J
111-91-1	bis(2-Chloroethoxy)Methane	10	U	
120-83-2	2,4-Dichlorophenol	10	U	J
120-82-1	1,2,4-Trichlorobenzene	10	U	
91-20-3	Naphthalene	10	U	
106-47-8	4-Chloroaniline	10	U	
87-68-3	Hexachlorobutadiene	10	U	
59-50-7	4-Chloro-3-methylphenol	10	U	J
91-57-6	2-Methylnaphthalene	10	U	
77-47-4	Hexachlorocyclopentadiene	10	U	
88-06-2	2,4,6-Trichlorophenol	10	U	J
95-95-4	2,4,5-Trichlorophenol	50	U	J
91-58-7	2-Chloronaphthalene	10	U	
88-74-4	2-Nitroaniline	50	U	
131-11-3	Dimethyl Phthalate	10	U	
208-96-8	Acenaphthylene	10	U	
606-20-2	2,6-Dinitrotoluene	10	U	

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD285

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) WATER Lab Sample ID: 880405303

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EU04053C03

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. _____ dec. _____ Date Extracted: 04/13/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/27/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) <u>UG/L</u>	<u>Q</u>
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U J
100-02-7	4-Nitrophenol	50	U J
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U J
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U J
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

JD285

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) WATER Lab Sample ID: 880405303

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EU04053C03

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. _____ dec. _____ Date Extracted: 04/13/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/27/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 6CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 545783-80-8	KETONE	4.53	11	UJ
2.	UNKNOWN	6.43	4	J
3.	UNKNOWN	12.09	8	J
4.	UNKNOWN	12.52	4	J
5.	UNKNOWN	15.90	5	J
6.	UNKNOWN	18.99	5	J

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD286

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405304Sample wt/vol: 30.0 (g/mL) GLab File ID: EU04053C04Level: (low/med) LOWDate Received: 04/13/88% Moisture: not dec. 12 dec. _____Date Extracted: 04/14/88Extraction: (SepF/Cont/Sonc) SONCDate Analyzed: 04/29/88GPC Cleanup: (Y/N) N pH: 5.2Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) <u>UG/KG</u>	<u>Q</u>
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl Alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)Ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-Propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JD286

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065
Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285
Matrix: (soil/water) SOIL Lab Sample ID: 880405304
Sample wt/vol: 30.0 (g/mL) G Lab File ID: EU04053C04
Level: (low/med) LOW Date Received: 04/13/88
% Moisture: not dec. 12 dec. _____ Date Extracted: 04/14/88
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/29/88
GPC Cleanup: (Y/N) N pH: 5.2 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	750	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)Pyrene	370	U
53-70-3	Dibenz(a,h)Anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD286

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) SOIL Lab Sample ID: 880405304

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EU04053C04

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. 12 dec. _____ Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/29/88

GPC Cleanup: (Y/N) N pH: 5.2 Dilution Factor: 1.00

Number TICs found: 13 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.40	14000	J
2.	UNKNOWN	8.23	350	J
3. 545783-80-8	ALIPHATIC HYDROCARBON	31.66	770	J
4.	UNKNOWN	32.82	920	J
5. 545783-80-8	ALIPHATIC HYDROCARBON	33.32	3800	J
6.	UNKNOWN	34.21	1100	J
7. 545783-80-8	ALIPHATIC HYDROCARBON	34.89	1300	J
8.	UNKNOWN	34.99	1500	J
9.	UNKNOWN	35.86	600	J
10.	UNKNOWN	37.12	2100	J
11.	UNKNOWN	37.74	900	J
12.	UNKNOWN	38.09	1500	J
13.	UNKNOWN	38.62	950	J

Keystone Env. Res., Inc. DC# 9315-10-8
18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD287

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065
Lab Code: KEYTX Case No.: 9315 SAS No.: SDG No.: JD285
Matrix: (soil/water) SOIL Lab Sample ID: 880405305
Sample wt/vol: 30.0 (g/mL) G Lab File ID: EU04053C05
Level: (low/med) LOW Date Received: 04/13/88
% Moisture: not dec. 11 dec. Date Extracted: 04/14/88
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/29/88
GPC Cleanup: (Y/N) N pH: 5.1 Dilution Factor: 2.0

		CONCENTRATION UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/Kg) <u>UG/KG</u>	Q
108-95-2	Phenol	740	U
111-44-4	bis(2-Chloroethyl)Ether	740	U
95-57-8	2-Chlorophenol	740	U
541-73-1	1,3-Dichlorobenzene	740	U
106-46-7	1,4-Dichlorobenzene	740	U
100-51-6	Benzyl Alcohol	740	U
95-50-1	1,2-Dichlorobenzene	740	U
95-48-7	2-Methylphenol	740	U
108-60-1	bis(2-Chloroisopropyl)Ether	740	U
106-44-5	4-Methylphenol	740	U
621-64-7	N-Nitroso-Di-n-Propylamine	740	U
67-72-1	Hexachloroethane	740	U
98-95-3	Nitrobenzene	740	U
78-59-1	Isophorone	740	U
88-75-5	2-Nitrophenol	740	U
105-67-9	2,4-Dimethylphenol	740	U
65-85-0	Benzoic Acid	3700	U
111-91-1	bis(2-Chloroethoxy)Methane	740	U
120-83-2	2,4-Dichlorophenol	740	U
120-82-1	1,2,4-Trichlorobenzene	740	U
91-20-3	Naphthalene	740	U
106-47-8	4-Chloroaniline	740	U
87-68-3	Hexachlorobutadiene	740	U
59-50-7	4-Chloro-3-methylphenol	740	U
91-57-6	2-Methylnaphthalene	740	U
77-47-4	Hexachlorocyclopentadiene	740	U
88-06-2	2,4,6-Trichlorophenol	740	U
95-95-4	2,4,5-Trichlorophenol	3700	U
31-58-7	2-Chloronaphthalene	740	U
88-74-4	2-Nitroaniline	3700	U
131-11-3	Dimethyl Phthalate	740	U
208-96-8	Acenaphthylene	740	U
606-20-2	2,6-Dinitrotoluene	740	U

1C Keystone Env. Res., Inc. DC# 9315-10-8
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CRM SAMPLE NO.

JD287

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065
Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285
Matrix: (soil/water) SOIL Lab Sample ID: 880405305
Sample wt/vol: 30.0 (g/mL) g Lab File ID: EU04053C05
Level: (low/med) LOW Date Received: 04/13/88
% Moisture: not dec. 11 dec. _____ Date Extracted: 04/14/88
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/29/88
GPC Cleanup: (Y/N) N pH: 6.1 Dilution Factor: 2.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) <u>UG/KG</u>	Q
99-09-2	3-Nitroaniline	3700	U
83-32-9	Acenaphthene	740	U
51-28-5	2,4-Dinitrophenol	3700	U
100-02-7	4-Nitrophenol	3700	U
132-64-9	Dibenzofuran	740	U
121-14-2	2,4-Dinitrotoluene	740	U
84-66-2	Diethylphthalate	740	U
7005-72-3	4-Chlorophenyl-phenylether	740	U
86-73-7	Fluorene	740	U
100-01-6	4-Nitroaniline	3700	U
534-52-1	4,6-Dinitro-2-methylphenol	3700	U
86-30-6	N-Nitrosodiphenylamine (1)	740	U
101-55-3	4-Bromophenyl-phenylether	740	U
118-74-1	Hexachlorobenzene	740	U
87-86-5	Pentachlorophenol	3700	U
85-01-8	Phenanthrene	740	U
120-12-7	Anthracene	740	U
84-74-2	Di-n-Butylphthalate	740	U
206-44-0	Fluoranthene	740	U
129-00-0	Pyrene	740	U
85-68-7	Butylbenzylphthalate	740	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)anthracene	740	U
218-01-9	Chrysene	740	U
117-81-7	bis(2-Ethylhexyl)phthalate	590	U
117-84-0	Di-n-octylphthalate	740	U
205-99-2	Benzo(b)fluoranthene	740	U
207-08-9	Benzo(k)fluoranthene	740	U
50-32-8	Benzo(a)pyrene	740	U
193-39-5	Indeno(1,2,3-cd)Pyrene	740	U
53-70-3	Dibenz(a,h)Anthracene	740	U
191-24-2	Benzo(g,h,i)perylene	740	U

(1) - Cannot be separated from Diphenylamine

Keystone Env. Res., Inc. DC# 9315-10-4

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD287

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065
Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285
Matrix: (soil/water) SOIL Lab Sample ID: 880405305
Sample wt/vol: 30.0 (g/mL) G Lab File ID: EU04053C05
Level: (low/med) LOW Date Received: 04/13/88
% Moisture: not dec. 11 dec. _____ Date Extracted: 04/14/88
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/29/88
GPC Cleanup: (Y/N) N pH: 6.1 Dilution Factor: 2.0

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.35	14000	J
2. 545783-80-8	CARBOXYLIC ACID	15.30	370	J
3.	UNKNOWN	25.16	710	J
4.	UNKNOWN	25.87	690	J
5.	UNKNOWN	37.11	1300	J
6.	UNKNOWN	37.66	680	J

300230

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JD288

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065
Code: KEYTX Case No.: 9315 SAS No.: SDG No.: JD285
Matrix: (soil/water) SOIL Lab Sample ID: 880405306
Sample wt/vol: 30.0 (g/mL) G Lab File ID: EU04053C06
Level: (low/med) LOW Date Received: 04/13/88
% Moisture: not dec. 20 dec. Date Extracted: 04/14/88
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/29/88
GPC Cleanup: (Y/N) N pH: 4.9 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
108-95-2	Phenol	2100	U
111-44-4	bis(2-Chloroethyl)Ether	2100	U
95-57-8	2-Chlorophenol	2100	U
541-73-1	1,3-Dichlorobenzene	2100	U
106-46-7	1,4-Dichlorobenzene	2100	U
100-51-6	Benzyl Alcohol	2100	U
95-50-1	1,2-Dichlorobenzene	2100	U
95-48-7	2-Methylphenol	2100	U
108-60-1	bis(2-Chloroisopropyl)Ether	2100	U
106-44-5	4-Methylphenol	2100	U
621-64-7	N-Nitroso-Di-n-Propylamine	2100	U
67-72-1	Hexachloroethane	2100	U
98-95-3	Nitrobenzene	2100	U
78-59-1	Isophorone	2100	U
88-75-5	2-Nitrophenol	2100	U
105-67-9	2,4-Dimethylphenol	2100	U
65-85-0	Benzoic Acid	10000	U
111-91-1	bis(2-Chloroethoxy)Methane	2100	U
120-83-2	2,4-Dichlorophenol	2100	U
120-82-1	1,2,4-Trichlorobenzene	2100	U
91-20-3	Naphthalene	2100	U
106-47-8	4-Chloroaniline	2100	U
87-68-3	Hexachlorobutadiene	2100	U
59-50-7	4-Chloro-3-methylphenol	2100	U
91-57-6	2-Methylnaphthalene	2100	U
77-47-4	Hexachlorocyclopentadiene	2100	U
88-06-2	2,4,6-Trichlorophenol	2100	U
95-95-4	2,4,5-Trichlorophenol	10000	U
91-58-7	2-Chloronaphthalene	2100	U
88-74-4	2-Nitroaniline	10000	U
131-11-3	Dimethyl Phthalate	2100	U
208-96-8	Acenaphthylene	2100	U
606-20-2	2,6-Dinitrotoluene	2100	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065 JD288
Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285
Matrix: (soil/water) SOIL Lab Sample ID: 880405306
Sample wt/vol: 30.0 (g/mL) g Lab File ID: EU04053C06
Level: (low/med) LOW Date Received: 04/13/88
% Moisture: not dec. 20 dec. _____ Date Extracted: 04/14/88
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/29/88
GPC Cleanup: (Y/N) N pH: 4.9 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
99-09-2	3-Nitroaniline	10000	U
83-32-9	Acenaphthene	2100	U
51-28-5	2,4-Dinitrophenol	10000	U
100-02-7	4-Nitrophenol	10000	U
132-64-9	Dibenzofuran	2100	U
121-14-2	2,4-Dinitrotoluene	2100	U
84-66-2	Diethylphthalate	2100	U
7005-72-3	4-Chlorophenyl-phenylether	2100	U
86-73-7	Fluorene	2100	U
100-01-6	4-Nitroaniline	10000	U
534-52-1	4,6-Dinitro-2-methylphenol	10000	U
86-30-6	N-Nitrosodiphenylamine (1)	2100	U
101-55-3	4-Bromophenyl-phenylether	2100	U
118-74-1	Hexachlorobenzene	2100	U
87-86-5	Pentachlorophenol	10000	U
85-01-8	Phenanthrene	2100	U
120-12-7	Anthracene	2100	U
84-74-2	Di-n-Butylphthalate	2100	U
206-44-0	Fluoranthene	2100	U
129-00-0	Pyrene	2100	U
85-68-7	Butylbenzylphthalate	2100	U
91-94-1	3,3'-Dichlorobenzidine	4100	U
56-55-3	Benzo(a)anthracene	2100	U
218-01-9	Chrysene	2100	U
117-81-7	bis(2-Ethylhexyl)phthalate	2100	U
117-84-0	Di-n-octylphthalate	2100	U
205-99-2	Benzo(b)fluoranthene	2100	U
207-08-9	Benzo(k)fluoranthene	2100	U
50-32-8	Benzo(a)pyrene	2100	U
193-39-5	Indeno(1,2,3-cd)Pyrene	2100	U
53-70-3	Dibenz(a,h)Anthracene	2100	U
191-24-2	Benzo(g,h,i)perylene	2100	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD288

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405306Sample wt/vol: 30.0 (g/mL) GLab File ID: EU04053C06Level: (low/med) LOWDate Received: 04/13/88% Moisture: not dec. 20 dec. _____Date Extracted: 04/14/88Extraction: (SepF/Cont/Sonc) SONCDate Analyzed: 04/29/88GPC Cleanup: (Y/N) N pH: 4.9Dilution Factor: 5.0Number TICs found: 8CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.88	19000	J
2. 545783-80-8	ALIPHATIC HYDROCARBON	29.91	11000	J
3.	UNKNOWN	31.71	6900	J
4.	UNKNOWN	32.87	3700	J
5.	UNKNOWN	34.54	2900	J
6.	UNKNOWN	36.56	2500	J
7.	UNKNOWN	37.22	7300	J
8.	UNKNOWN	38.77	1600	J

000246

Keystone Env. Res., Inc. DC# 9315-10-8

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD289

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) SOIL

Lab Sample ID: 880405307

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: EU04053C07

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. 13 dec. _____

Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/29/88

GPC Cleanup: (Y/N) N pH: 5.8

Dilution Factor: 2.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
108-95-2	Phenol	760	U
111-44-4	bis(2-Chloroethyl)Ether	760	U
95-57-8	2-Chlorophenol	760	U
541-73-1	1,3-Dichlorobenzene	760	U
106-46-7	1,4-Dichlorobenzene	760	U
100-51-6	Benzyl Alcohol	760	U
95-50-1	1,2-Dichlorobenzene	760	U
95-48-7	2-Methylphenol	760	U
108-60-1	bis(2-Chloroisopropyl)Ether	760	U
106-44-5	4-Methylphenol	760	U
621-64-7	N-Nitroso-Di-n-Propylamine	760	U
67-72-1	Hexachloroethane	760	U
98-95-3	Nitrobenzene	760	U
78-59-1	Isophorone	760	U
88-75-5	2-Nitrophenol	760	U
105-67-9	2,4-Dimethylphenol	760	U
65-85-0	Benzoic Acid	3800	U
111-91-1	bis(2-Chloroethoxy)Methane	760	U
120-83-2	2,4-Dichlorophenol	760	U
120-82-1	1,2,4-Trichlorobenzene	760	U
91-20-3	Naphthalene	760	U
106-47-8	4-Chloroaniline	760	U
87-68-3	Hexachlorobutadiene	760	U
59-50-7	4-Chloro-3-methylphenol	760	U
91-57-6	2-Methylnaphthalene	760	U
77-47-4	Hexachlorocyclopentadiene	760	U
88-06-2	2,4,6-Trichlorophenol	760	U
95-95-4	2,4,5-Trichlorophenol	3800	U
91-58-7	2-Chloronaphthalene	760	U
88-74-4	2-Nitroaniline	3800	U
131-11-3	Dimethyl Phthalate	760	U
208-96-8	Acenaphthylene	760	U
606-20-2	2,6-Dinitrotoluene	760	U

Keystone Env. Res., Inc. DC# 9315-10-3

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD289

Lab Name: KEYSTONE ENV.

Contract: 68-WB-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) SOIL

Lab Sample ID: 980405307

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: EU04053C07

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. 13 dec. _____

Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/29/88

GPC Cleanup: (Y/N) N pH: 5.8

Dilution Factor: 2.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

99-09-2	3-Nitroaniline	3800	U
83-32-9	Acenaphthene	760	U
51-28-5	2,4-Dinitrophenol	3800	U
100-02-7	4-Nitrophenol	3800	U
132-64-9	Dibenzofuran	760	U
121-14-2	2,4-Dinitrotoluene	760	U
84-66-2	Diethylphthalate	760	U
7005-72-3	4-Chlorophenyl-phenylether	760	U
86-73-7	Fluorene	760	U
100-01-6	4-Nitroaniline	3800	U
534-52-1	4,6-Dinitro-2-methylphenol	3800	U
86-30-6	N-Nitrosodiphenylamine (1)	760	U
101-55-3	4-Bromophenyl-phenylether	760	U
118-74-1	Hexachlorobenzene	760	U
87-86-5	Pentachlorophenol	3800	U
85-01-8	Phenanthrene	760	U
120-12-7	Anthracene	760	U
84-74-2	Di-n-Butylphthalate	760	U
206-44-0	Fluoranthene	760	U
129-00-0	Pyrene	760	U
85-68-7	Butylbenzylphthalate	760	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)anthracene	760	U
218-01-9	Chrysene	760	U
117-81-7	bis(2-Ethylhexyl)phthalate	760	U
117-84-0	Di-n-octylphthalate	760	U
205-99-2	Benzo(b)fluoranthene	760	U
207-08-9	Benzo(k)fluoranthene	760	U
50-32-8	Benzo(a)pyrene	760	U
193-39-5	Indeno(1,2,3-cd)Pyrene	760	U
53-70-3	Dibenz(a,h)Anthracene	760	U
191-24-2	Benzo(g,h,i)perylene	760	U

(1) - Cannot be separated from Diphenylamine

000261513

Keystone Env. Res., Inc. DC# 9315-10-4

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065 JD289
Lab Code: KEYTX Case No.: 9315 SAS No.: SDG No.: JD285
Matrix: (soil/water) SOIL Lab Sample ID: 880405307
Sample wt/vol: 30.0 (g/mL) G Lab File ID: EU04053C07
Level: (low/med) LOW Date Received: 04/13/88
% Moisture: not dec. 13 dec. Date Extracted: 04/14/88
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/29/88
GPC Cleanup: (Y/N) N pH: 5.8 Dilution Factor: 2.0

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.07	18000	J
2.	UNKNOWN	29.82	4700	J
3.	UNKNOWN	31.67	1600	J
4.	UNKNOWN	37.12	770	J
5.	UNKNOWN	38.07	790	J
6.	UNKNOWN	38.71	990	J
7.	UNKNOWN	39.14	730	J
8.	UNKNOWN	39.31	1300	J

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD290

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405308Sample wt/vol: 30.0 (g/mL) GLab File ID: EU04053C08Level: (low/med) LOWDate Received: 04/13/88% Moisture: not dec. 16 dec. _____Date Extracted: 04/14/88Extraction: (SepF/Cont/Sonc) SONCDate Analyzed: 04/29/88GPC Cleanup: (Y/N) N pH: 4.6Dilution Factor: 1.00

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	bis(2-Chloroisopropyl)Ether	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	2000	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

1L
KeyStone Env. Res., Inc. DC# 9315-10-8
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD290

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065
Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285
Matrix: (soil/water) SOIL Lab Sample ID: 880405308
Sample wt/vol: 30.0 (g/mL) G Lab File ID: EU04053C08
Level: (low/med) LOW Date Received: 04/13/88
% Moisture: not dec. 16 dec. _____ Date Extracted: 04/14/88
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/29/88
GPC Cleanup: (Y/N) N pH: 4.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	790	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	440	UJ
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

(1) - Cannot be separated from Diphenylamine

Keystone Env. Res., Inc. DC# 9315-10-4

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD290

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) SOIL

Lab Sample ID: 880405308

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: EU04053C08

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. 16 dec. _____

Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/29/88

GPC Cleanup: (Y/N) N pH: 4.6

Dilution Factor: 1.00

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.45	17000	UJ
2. 25796-26-3	1,3-DIOXANE, 5-ETHYL-2,2-DIM	5.87	1300	J
3. 545783-80-8	ALIPHATIC HYDROCARBON	29.86	2900	J
4.	UNKNOWN	30.79	2300	J
5.	UNKNOWN	31.69	1700	J
6.	UNKNOWN	34.51	340	J
7.	UNKNOWN	34.92	1200	J
8.	UNKNOWN	37.09	870	J
9.	UNKNOWN	37.17	1300	J
10.	UNKNOWN	37.82	1200	J
11.	UNKNOWN	38.11	900	J
12.	UNKNOWN	38.21	460	J
13.	UNKNOWN	38.71	1000	J

000278

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD291

Lab Name: KEYSTONE ENV.Contract: 68-WB-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405309Sample wt/vol: 30.0 (g/mL) GLab File ID: EU04053C09Level: (low/med) LOWDate Received: 04/13/88% Moisture: not dec. 5 dec. _____Date Extracted: 04/14/88Extraction: (SepF/Cont/Sonc) SONCDate Analyzed: 04/29/88GPC Cleanup: (Y/N) N pH: 5.7Dilution Factor: 2.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
108-95-2	Phenol	690	U
111-44-4	bis(2-Chloroethyl)Ether	690	U
95-57-8	2-Chlorophenol	690	U
541-73-1	1,3-Dichlorobenzene	690	U
106-46-7	1,4-Dichlorobenzene	690	U
100-51-6	Benzyl Alcohol	690	U
95-50-1	1,2-Dichlorobenzene	690	U
95-48-7	2-Methylphenol	690	U
108-60-1	bis(2-Chloroisopropyl)Ether	690	U
106-44-5	4-Methylphenol	690	U
621-64-7	N-Nitroso-Di-n-Propylamine	690	U
67-72-1	Hexachloroethane	690	U
98-95-3	Nitrobenzene	690	U
78-59-1	Isophorone	690	U
88-75-5	2-Nitrophenol	690	U
105-67-9	2,4-Dimethylphenol	690	U
65-85-0	Benzoic Acid	3500	U
111-91-1	bis(2-Chloroethoxy)Methane	690	U
120-83-2	2,4-Dichlorophenol	690	U
120-82-1	1,2,4-Trichlorobenzene	690	U
91-20-3	Naphthalene	690	U
106-47-8	4-Chloroaniline	690	U
87-68-3	Hexachlorobutadiene	690	U
59-50-7	4-Chloro-3-methylphenol	690	U
91-57-6	2-Methylnaphthalene	690	U
77-47-4	Hexachlorocyclopentadiene	690	U
88-06-2	2,4,6-Trichlorophenol	690	U
95-95-4	2,4,5-Trichlorophenol	3500	U
91-58-7	2-Chloronaphthalene	690	U
88-74-4	2-Nitroaniline	3500	U
131-11-3	Dimethyl Phthalate	690	U
208-96-8	Acenaphthylene	690	U
606-20-2	2,6-Dinitrotoluene	690	U

Keystone Env. Res., Inc. DC# 9315-10-8

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JD291

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) SOIL

Lab Sample ID: 880405309

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: EU04053C09

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. 5 dec. _____

Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/29/88

GPC Cleanup: (Y/N) N pH: 5.7

Dilution Factor: 2.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
99-09-2	3-Nitroaniline	3500	U
83-32-9	Acenaphthene	690	U
51-28-5	2,4-Dinitrophenol	3500	U
100-02-7	4-Nitrophenol	3500	U
132-64-9	Dibenzofuran	690	U
121-14-2	2,4-Dinitrotoluene	690	U
84-66-2	Diethylphthalate	690	U
7005-72-3	4-Chlorophenyl-phenylether	690	U
86-73-7	Fluorene	690	U
100-01-6	4-Nitroaniline	3500	U
534-52-1	4,6-Dinitro-2-methylphenol	3500	U
86-30-6	N-Nitrosodiphenylamine (1)	690	U
101-55-3	4-Bromophenyl-phenylether	690	U
118-74-1	Hexachlorobenzene	690	U
87-86-5	Pentachlorophenol	3500	U
85-01-8	Phenanthrene	690	U
120-12-7	Anthracene	690	U
84-74-2	Di-n-Butylphthalate	690	U
206-44-0	Fluoranthene	690	U
129-00-0	Pyrene	690	U
85-68-7	Butylbenzylphthalate	690	U
91-94-1	3,3'-Dichlorobenzidine	1400	U
56-55-3	Benzo(a)anthracene	690	U
218-01-9	Chrysene	690	U
117-81-7	bis(2-Ethylhexyl)phthalate	690	U
117-84-0	Di-n-octylphthalate	690	U
205-99-2	Benzo(b)fluoranthene	690	U
207-08-9	Benzo(k)fluoranthene	690	U
50-32-8	Benzo(a)pyrene	690	U
193-39-5	Indeno(1,2,3-cd)Pyrene	690	U
53-70-3	Dibenz(a,h)Anthracene	690	U
191-24-2	Benzo(g,h,i)perylene	690	U

(1) - Cannot be separated from Diphenylamine

000300

Keystone Env. Res., Inc. DC# 9315-10-3

IF
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065 JD291
Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285
Matrix: (soil/water) SOIL Lab Sample ID: 880405309
Sample wt/vol: 30.0 (g/mL) G Lab File ID: EU04053C09
Level: (low/med) LOW Date Received: 04/13/88
% Moisture: not dec. 5 dec. _____ Date Extracted: 04/14/88
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/29/88
GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 2.0

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.42	16000	UJ
2.	UNKNOWN	31.69	470	IJ
3.	UNKNOWN	34.21	400	IJ
4.	UNKNOWN	35.11	650	IJ
5.	UNKNOWN	35.39	540	IJ
6.	UNKNOWN	35.51	470	IJ

5/31/88

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD292

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) SOILLab Sample ID: 880405310Sample wt/vol: 30.0 (g/mL) GLab File ID: EU04053C10Level: (low/med) Level: (low/med) LOW
d: 04/13/88

Date Received

% Moisture: not dec. 9 dec. _____Date Extracted: 04/14/88Extraction: (SepF/Cont/Sonc) SONCDate Analyzed: 04/29/88GPC Cleanup: (Y/N) N pH: 5.4Dilution Factor: 2.0

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

Q

108-95-2	Phenol	730	U
111-44-4	bis(2-Chloroethyl)Ether	730	U
95-57-8	2-Chlorophenol	730	U
541-73-1	1,3-Dichlorobenzene	730	U
106-46-7	1,4-Dichlorobenzene	730	U
100-51-6	Benzyl Alcohol	730	U
95-50-1	1,2-Dichlorobenzene	730	U
95-48-7	2-Methylphenol	730	U
108-60-1	bis(2-Chloroisopropyl)Ether	730	U
106-44-5	4-Methylphenol	730	U
621-64-7	N-Nitroso-Di-n-Propylamine	730	U
67-72-1	Hexachloroethane	730	U
98-95-3	Nitrobenzene	730	U
78-59-1	Isophorone	730	U
88-75-5	2-Nitrophenol	730	U
105-67-9	2,4-Dimethylphenol	730	U
65-85-0	Benzoic Acid	3600	U
111-91-1	bis(2-Chloroethoxy)Methane	730	U
120-83-2	2,4-Dichlorophenol	730	U
120-82-1	1,2,4-Trichlorobenzene	730	U
91-20-3	Naphthalene	730	U
106-47-8	4-Chloroaniline	730	U
87-68-3	Hexachlorobutadiene	730	U
59-50-7	4-Chloro-3-methylphenol	730	U
91-57-6	2-Methylnaphthalene	730	U
77-47-4	Hexachlorocyclopentadiene	730	U
88-06-2	2,4,6-Trichlorophenol	730	U
95-95-4	2,4,5-Trichlorophenol	3600	U
91-58-7	2-Chloronaphthalene	730	U
88-74-4	2-Nitroaniline	3600	U
131-11-3	Dimethyl Phthalate	730	U
208-96-8	Acenaphthylene	730	U
606-20-2	2,6-Dinitrotoluene	730	U

Keystone Env. Res., Inc. DC# 9315-10-8

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD292

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.:

SDG No.: JD285

Matrix: (soil/water) SOIL

Lab Sample ID: 880405310

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: EU04053C10

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. 9 dec.

Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/29/88

GPC Cleanup: (Y/N) N pH: 5.4

Dilution Factor: 2.0

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

Q

99-09-2	3-Nitroaniline	3600	U
83-32-9	Acenaphthene	730	U
51-28-5	2,4-Dinitrophenol	3600	U
100-02-7	4-Nitrophenol	3600	U
132-64-9	Dibenzofuran	730	U
121-14-2	2,4-Dinitrotoluene	730	U
84-66-2	Diethylphthalate	730	U
7005-72-3	4-Chlorophenyl-phenylether	730	U
86-73-7	Fluorene	730	U
100-01-6	4-Nitroaniline	3600	U
534-52-1	4,6-Dinitro-2-methylphenol	3600	U
86-30-6	N-Nitrosodiphenylamine (1)	730	U
101-55-3	4-Bromophenyl-phenylether	730	U
118-74-1	Hexachlorobenzene	730	U
87-86-5	Pentachlorophenol	3600	U
85-01-8	Phenanthrene	730	U
120-12-7	Anthracene	730	U
84-74-2	Di-n-Butylphthalate	730	U
206-44-0	Fluoranthene	730	U
129-00-0	Pyrene	730	U
85-68-7	Butylbenzylphthalate	730	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)anthracene	730	U
218-01-9	Chrysene	730	U
117-81-7	bis(2-Ethylhexyl)phthalate	730	U
117-84-0	Di-n-octylphthalate	730	U
205-99-2	Benzo(b)fluoranthene	730	U
207-08-9	Benzo(k)fluoranthene	730	U
50-32-8	Benzo(a)pyrene	730	U
193-39-5	Indeno(1,2,3-cd)Pyrene	730	U
53-70-3	Dibenz(a,h)Anthracene	730	U
191-24-2	Benzo(g,h,i)perylene	730	U

(1) - Cannot be separated from Diphenylamine

000314

Keystone Env. Res., Inc. DC# 9315-10-3

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JD292

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) SOIL

Lab Sample ID: 880405310

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: EU04053C10

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. 9 dec. _____

Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/29/88

GPC Cleanup: (Y/N) N pH: 5.4

Dilution Factor: 2.0

Number TICs found: 8

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.97	8400	J
2.	545783-80-8 ALIPHATIC HYDROCARBON	21.14	360	hh
3.	545783-80-8 ALIPHATIC HYDROCARBON	22.45	300	
4.	545783-80-8 ALCOHOL	29.82	710	
5.	UNKNOWN	31.66	420	J
6.	UNKNOWN	32.84	370	J
7.	UNKNOWN	37.12	560	J
8.	UNKNOWN	38.67	380	J

000315

Keystone Env. Res., Inc. DC# 9315-10-2

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD293

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) WATER

Lab Sample ID: 880405313

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: EU04053C13

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. _____ dec. _____

Date Extracted: 04/13/88

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/27/88

GPC Cleanup: (Y/N) N pH: _____

Dilution Factor: 1.0

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.

COMPOUND

108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

Keystone Env. Res., Inc. DC# 9315-10-4

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD293

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) WATER

Lab Sample ID: 880405313

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: EU04053C13

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. _____ dec. _____

Date Extracted: 04/13/88

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/27/88

GPC Cleanup: (Y/N) N pH: _____

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Q

99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	3	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

Keystone Env. Res., Inc. DC# 9315-10-8

EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JD293

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) WATER Lab Sample ID: 880405313

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EU04053C13

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. _____ dec. _____ Date Extracted: 04/13/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/27/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 545783-80-8	KETONE	5.08	10	UJ
2. 105-60-2	CAPROLACTAM	14.49	7	J

Keystone Env. Res., Inc. DC# 9315-10-8

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD294

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) WATER

Lab Sample ID: 880405316

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: EU04053C16

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. _____ dec. _____

Date Extracted: 04/13/88

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/27/88

GPC Cleanup: (Y/N) N pH: _____

Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.

COMPOUND

Q

108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

Keystone Env. Res., Inc. DC# 9315-10-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD294

Lab Name: KEYSTONE ENV.Contract: 68-W8-0065Lab Code: KEYTXCase No.: 9315

SAS No.: _____

SDG No.: JD285Matrix: (soil/water) WATERLab Sample ID: 880405316Sample wt/vol: 1000 (g/mL) MLLab File ID: EU04053C16Level: (low/med) LOWDate Received: 04/13/88

% Moisture: not dec. _____ dec. _____

Date Extracted: 04/13/88Extraction: (SepF/Cont/Sonc) CONTDate Analyzed: 04/27/88GPC Cleanup: (Y/N) N pH: _____Dilution Factor: 1.0

		CONCENTRATION UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/Kg) <u>UG/L</u>	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	4	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

Keystone Env. Res., Inc. DC# 9315-10-4

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD294

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) WATER

Lab Sample ID: 980405316

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: EU04053C16

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. _____ dec. _____

Date Extracted: 04/13/88

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/27/88

GPC Cleanup: (Y/N) N pH: _____

Dilution Factor: 1.0

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 545783-80-8	KETONE	4.57	13	W
2.	UNKNOWN	11.52	6	J
3. 545783-80-8	HALOGENATED HYDROCARBON	12.19	26	J
4.	UNKNOWN	23.09	6	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Keystone Env. Res., Inc. DC# 9315-10-14

JD285

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) WATER

Lab Sample ID: 8804053 03A

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: _____

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. _____ dec. _____

Date Extracted: 04/13/88

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 05/03/88

GPC Cleanup: (Y/N) N pH: 5.0

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) <u>UG/L</u>	<u>Q</u>
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Keystone Env. Res., Inc. DC# 9315-10-14

JD286

Lab Name: KEYSTONE ENV.

Contract: 68-WB-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) SOIL

Lab Sample ID: 8804053 04A

Sample wt/vol: 30.0 (g/mL) g

Lab File ID: _____

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. 12 dec. _____

Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 05/03/88

GPC Cleanup: (Y/N) N

pH: 5.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
---------	----------	--	---

319-84-6	alpha-BHC	9.1	U
319-85-7	beta-BHC	9.1	U
319-86-8	delta-BHC	9.1	U
58-89-9	gamma-BHC (Lindane)	9.1	U
76-44-8	Heptachlor	9.1	U
309-00-2	Aldrin	9.1	U
1024-57-3	Heptachlor epoxide	9.1	U
959-98-8	Endosulfan I	9.1	U
60-57-1	Dieldrin	18	U
72-55-9	4,4'-DDE	18	U
72-20-8	Endrin	18	U
33213-65-9	Endosulfan II	18	U
72-54-8	4,4'-DDD	18	U
1031-07-8	Endosulfan sulfate	18	U
50-29-3	4,4'-DDT	18	U
72-43-5	Methoxychlor	91	U
53494-70-5	Endrin ketone	18	U
5103-71-9	alpha-Chlordane	91	U
5103-74-2	gamma-Chlordane	91	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	91	U
11104-28-2	Aroclor-1221	91	U
11141-16-5	Aroclor-1232	91	U
53469-21-9	Aroclor-1242	91	U
12672-29-6	Aroclor-1248	91	U
11097-69-1	Aroclor-1254	180	U
11096-82-5	Aroclor-1260	180	U

JULY
5/31/88

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Keystone Env. Res., Inc. DC# 9315-10-14

JD287

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) SOIL Lab Sample ID: 8804053 05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. 11 dec. _____ Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/88

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
319-84-6	alpha-BHC	9.0IU	
319-85-7	beta-BHC	9.0IU	
319-86-8	delta-BHC	9.0IU	
58-89-9	gamma-BHC (Lindane)	9.0IU	
76-44-8	Heptachlor	9.0IU	
309-00-2	Aldrin	9.0IU	
1024-57-3	Heptachlor epoxide	9.0IU	
959-98-8	Endosulfan I	9.0IU	
60-57-1	Dieldrin	18 IU	
72-55-9	4,4'-DDE	18 IU	
72-20-8	Endrin	18 IU	
33213-65-9	Endosulfan II	18 IU	
72-54-8	4,4'-DDD	18 IU	
1031-07-8	Endosulfan sulfate	18 IU	
50-29-3	4,4'-DDT	18 IU	
72-43-5	Methoxychlor	90 IU	
53494-70-5	Endrin ketone	18 IU	
5103-71-9	alpha-Chlordane	90 IU	
5103-74-2	gamma-Chlordane	90 IU	
8001-35-2	Toxaphene	180 IU	
12674-11-2	Aroclor-1016	90 IU	
11104-28-2	Aroclor-1221	90 IU	
11141-16-5	Aroclor-1232	90 IU	
53469-21-9	Aroclor-1242	90 IU	
12672-29-6	Aroclor-1248	90 IU	
11097-69-1	Aroclor-1254	180 IU	
11096-82-5	Aroclor-1260	180 IU	

204
5/31/88

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET
Keystone Env. Res., Inc. DC# 9315-10-14

EPA SAMPLE NO.

JD288

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) SOIL Lab Sample ID: 8804053 06A

Sample wt/vol: 30.0 (g/mL) g Lab File ID: _____

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. 20 dec. _____ Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/88

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
319-84-6	alpha-BHC	10	U
319-85-7	beta-BHC	10	U
319-86-8	delta-BHC	10	U
58-89-9	gamma-BHC (Lindane)	10	U
76-44-8	Heptachlor	10	U
309-00-2	Aldrin	10	U
1024-57-3	Heptachlor epoxide	10	U
959-98-8	Endosulfan I	10	U
60-57-1	Dieldrin	20	U
72-55-9	4,4'-DDE	20	U
72-20-8	Endrin	20	U
33213-65-9	Endosulfan II	20	U
72-54-8	4,4'-DDD	20	U
1031-07-8	Endosulfan sulfate	20	U
50-29-3	4,4'-DDT	20	U
72-43-5	Methoxychlor	100	U
53494-70-5	Endrin ketone	20	U
5103-71-9	alpha-Chlordane	100	U
5103-74-2	gamma-Chlordane	100	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	100	U
11104-28-2	Aroclor-1221	100	U
11141-16-5	Aroclor-1232	100	U
53469-21-9	Aroclor-1242	100	U
12672-29-6	Aroclor-1248	100	U
11097-69-1	Aroclor-1254	200	U
11096-82-5	Aroclor-1260	200	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Keystone Env. Res., Inc. DC# 9315-10-14

EPA SAMPLE NO.

JD289

Lab Name: KEYSTONE ENV. Contract: 68-W8-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) SOIL Lab Sample ID: 8804053 07A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. 13 dec. _____ Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/88

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
319-84-6	alpha-BHC	9.2	U
313-85-7	beta-BHC	9.2	U
319-86-8	delta-BHC	9.2	U
58-89-9	gamma-BHC (Lindane)	9.2	U
76-44-8	Heptachlor	9.2	U
309-00-2	Aldrin	9.2	U
1024-57-3	Heptachlor epoxide	9.2	U
959-98-8	Endosulfan I	9.2	U
60-57-1	Dieldrin	18	U
72-55-9	4,4'-DDE	19	U
72-20-8	Endrin	18	U
33213-65-9	Endosulfan II	18	U
72-54-8	4,4'-DDD	18	U
1031-07-8	Endosulfan sulfate	18	U
50-29-3	4,4'-DDT	18	U
72-43-5	Methoxychlor	92	U
53494-70-5	Endrin ketone	18	U
5103-71-9	alpha-Chlordane	92	U
5103-74-2	gamma-Chlordane	92	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	92	U
11104-28-2	Aroclor-1221	92	U
11141-16-5	Aroclor-1232	92	U
53469-21-9	Aroclor-1242	92	U
12672-29-6	Aroclor-1248	92	U
11097-69-1	Aroclor-1254	180	U
11096-82-5	Aroclor-1260	180	U

20K
5/31/88

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Keystone Env. Res., Inc. DC# 9315-10-14

EPA SAMPLE NO.

JD290

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) SOIL

Lab Sample ID: 8804053 08A

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: _____

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. 16 dec. _____

Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 05/03/88

GPC Cleanup: (Y/N) N pH: 5.0

Dilution Factor: 1.00

		CONCENTRATION UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/Kg) <u>UG/KG</u>	Q
319-84-6	alpha-BHC	9.5	U
319-85-7	beta-BHC	9.5	U
319-86-8	delta-BHC	9.5	U
58-89-9	gamma-BHC (Lindane)	9.5	U
76-44-8	Heptachlor	9.5	U
309-00-2	Aldrin	9.5	U
1024-57-3	Heptachlor epoxide	9.5	U
959-98-8	Endosulfan I	9.5	U
60-57-1	Dieldrin	19	U
72-55-9	4,4'-DDE	19	U
72-20-8	Endrin	19	U
33213-65-9	Endosulfan II	19	U
72-54-8	4,4'-DDD	19	U
1031-07-8	Endosulfan sulfate	19	U
50-29-3	4,4'-DDT	19	U
72-43-5	Methoxychlor	95	U
53494-70-5	Endrin ketone	19	U
5103-71-9	alpha-Chlordane	95	U
5103-74-2	gamma-Chlordane	95	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	95	U
11104-28-2	Aroclor-1221	95	U
11141-16-5	Aroclor-1232	95	U
53469-21-9	Aroclor-1242	95	U
12672-29-6	Aroclor-1248	95	U
11097-69-1	Aroclor-1254	190	U
11096-82-5	Aroclor-1260	190	U

Handwritten: 5/13/88

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Keystone Env. Res., Inc. DC# 9315-10-14

EPA SAMPLE NO.

JD291

Lab Name: KEYSTONE ENV.

Contract: 68-WB-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) SOIL

Lab Sample ID: 8804053 09A

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: _____

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. 5 dec. _____

Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 05/03/88

GPC Cleanup: (Y/N) N pH: 5.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
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319-84-6	alpha-BHC	8.4	U
319-85-7	beta-BHC	8.4	U
319-86-8	delta-BHC	8.4	U
58-89-9	gamma-BHC (Lindane)	8.4	U
76-44-8	Heptachlor	8.4	U
309-00-2	Aldrin	8.4	U
1024-57-3	Heptachlor epoxide	8.4	U
959-98-8	Endosulfan I	8.4	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	84	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	84	U
5103-74-2	gamma-Chlordane	84	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	84	U
11104-28-2	Aroclor-1221	84	U
11141-16-5	Aroclor-1232	84	U
53469-21-9	Aroclor-1242	84	U
12672-29-6	Aroclor-1248	84	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

Handwritten signature/initials
5/31/88

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Keystone Env. Res., Inc. DC# 9315-10-14

JD292

Lab Name: KEYSTONE ENV. Contract: 68-WB-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) SOIL Lab Sample ID: 8804053 10A

Sample wt/vol: 30.0 (g/mL) g Lab File ID: _____

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. 5 dec. _____ Date Extracted: 04/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/88

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
319-84-6	alpha-BHC	8.4	U
319-85-7	beta-BHC	8.4	U
319-86-8	delta-BHC	8.4	U
58-89-9	gamma-BHC (Lindane)	8.4	U
76-44-8	Heptachlor	8.4	U
309-00-2	Aldrin	8.4	U
1024-57-3	Heptachlor epoxide	8.4	U
959-98-8	Endosulfan I	8.4	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	84	U
53494-70-5	Endrin ketone	17	U
5103-71-9	alpha-Chlordane	84	U
5103-74-2	gamma-Chlordane	84	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	84	U
11104-28-2	Aroclor-1221	84	U
11141-16-5	Aroclor-1232	84	U
53469-21-9	Aroclor-1242	84	U
12672-29-6	Aroclor-1248	84	U
11097-69-1	Aroclor-1254	170	U
11096-92-5	Aroclor-1260	170	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Keystone Env. Res., Inc. DC# 9315-10-14

EPA SAMPLE NO.

JD293

Lab Name: KEYSTONE ENV. Contract: 68-WB-0065

Lab Code: KEYTX Case No.: 9315 SAS No.: _____ SDG No.: JD285

Matrix: (soil/water) WATER Lab Sample ID: 8804053 13A

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 04/13/88

% Moisture: not dec. _____ dec. _____ Date Extracted: 04/13/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/03/88

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/L
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-5	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

JD 4
5/31/88

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Keystone Env. Res., Inc. DC# 9315-10-14

EPA SAMPLE NO.

JD294

Lab Name: KEYSTONE ENV.

Contract: 68-W8-0065

Lab Code: KEYTX

Case No.: 9315

SAS No.: _____

SDG No.: JD285

Matrix: (soil/water) WATER

Lab Sample ID: 9804053 16A

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: _____

Level: (low/med) LOW

Date Received: 04/13/88

% Moisture: not dec. _____ dec. _____

Date Extracted: 04/13/88

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 05/03/88

GPC Cleanup: (Y/N) N pH: 5.0

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

319-84-6	alpha-BHC	0.050IU
319-85-7	beta-BHC	0.050IU
319-86-8	delta-BHC	0.050IU
58-89-9	gamma-BHC (Lindane)	0.050IU
76-44-8	Heptachlor	0.050IU
309-00-2	Aldrin	0.050IU
1024-57-3	Heptachlor epoxide	0.050IU
959-98-8	Endosulfan I	0.050IU
60-57-1	Dieldrin	0.10IU
72-55-9	4,4'-DDE	0.10IU
72-20-8	Endrin	0.10IU
33213-65-9	Endosulfan II	0.10IU
72-54-8	4,4'-DDD	0.10IU
1031-07-8	Endosulfan sulfate	0.10IU
50-29-3	4,4'-DDT	0.10IU
72-43-5	Methoxychlor	0.50IU
53494-70-5	Endrin ketone	0.10IU
5103-71-9	alpha-Chlordane	0.50IU
5103-74-2	gamma-Chlordane	0.50IU
8001-35-2	Toxaphene	1.0IU
12674-11-2	Aroclor-1016	0.50IU
11104-28-2	Aroclor-1221	0.50IU
11141-16-5	Aroclor-1232	0.50IU
53469-21-9	Aroclor-1242	0.50IU
12672-29-6	Aroclor-1248	0.50IU
11097-69-1	Aroclor-1254	1.0IU
11096-82-5	Aroclor-1260	1.0IU

1048/88
5/31/88



ecology and environment, inc.

101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537

International Specialists in the Environment

MEMORANDUM

DATE: June 29, 1988

FOR: Joyce Crosson, RSCC, USEPA, Region X

THRU: Jeffrey Villnow, FIT-OM, E&E, Seattle *JV*

FROM: James Herndon, Chemist, E&E, Seattle *JEH*
Andrew Hafferty, Senior Chemist, E&E, Seattle *AH*

SUBJ: QA of Case 9504 (Organics)
Widing Transportation

REF: TDD F10-8806-09
PAN F10Z063QAQ

CC: John Osborn, ESD-PO, USEPA, Region X
Raleigh Farlow, ESD-DPO, USEPA, Region X
Gerald Muth, DPO, USEPA, Region X, Laboratory, Manchester
William Glasser, HWD-SM, USEPA, Region X
Joe Hunt, FIT-PM, E&E, Seattle

The Quality Assurance review of 5 samples, Case 9504 collected from Widing Transportation has been completed. The five soil samples were analyzed at low level for volatiles, semivolatiles and pesticides/PCBs by Ecova of Redmond, Washington. The samples were numbered:

JD-403

JD-405

JD-407

JD-404

JD-406

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control Specifications outlined in IFB WA-87K236-238.

1) Timeliness - Acceptable

Sample Number	Sample Date	Recd. Date	VOA Anal.	BNA Extr.	BNA Anal.	PEST Extr.	PEST Anal.
JD-403	05-03	05-09	05-10	05-16	05-25	05-18	05-25
JD-404	05-03	05-09	05-10	05-16	05-25	05-18	05-25
JD-405	05-03	05-09	05-16	05-16	05-25	05-18	05-25
JD-406	05-03	05-09	05-17	05-16	05-25	05-18	05-25
JD-407	05-03	05-09	05-17	05-16	05-25	05-18	05-25

The samples were received by the laboratory six days after sampling. The volatiles analyses for samples JD-405, JD-406 and JD-407 were done within seven days after receipt, but past seven days after sampling. The semivolatiles were extracted seven days after receipt, but thirteen days after sampling. The pesticides/PCBs were extracted nine days after receipt, but fifteen days after sampling. A delay in transporting samples caused the late analysis dates for the volatiles and semivolatiles. The pesticides were extracted late by the laboratory.

Positive volatile results for samples JD-405, JD-406 and JD-407, all positive semivolatile results and all positive pesticide/PCB results were flagged "J" (estimated). The volatile detection limits for samples JD-405, JD-406 and JD-407, all semivolatiles detection limits and all pesticide/PCB detection limits were flagged "UJ" (undetected, estimated quantitation limit).

2) Instrument Tuning - Acceptable

All 4-bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP) tuning check compound mass abundances and ratios met contract required limits.

3) Initial Calibration - Acceptable

All system performance check compounds (SPCC) and calibration check compounds (CCC) were within contract required limits for volatile and semivolatile analyses.

The following compound had an average relative response factor (ARRF) less than 0.05 for the initial calibration.

Date	Compound	Type	Fraction	ARRF
05-09	2-Butanone	TCL	volatile	0.043

ARRF = Average Relative Response Factor

All positive results for 2-butanone were flagged 'J' (estimated) and detection limits flagged "UR" (undetected, rejected quantitation limit) for all samples.

4) Continuing Calibrations - Acceptable

All system performance check compounds (SPCC) and calibration check compounds (CCC) were within contract required limits for volatile and semivolatile analyses.

The following compound had an relative response factor (RRF) less than 0.05 for the continuing calibration.

Date	Compound	Type	Fraction	RRF
05-09	2-butanone	TCL	volatile	0.044

RRF = Relative Response Factor

All positive results for 2-butanone were flagged 'J' (estimated) and detection limits flagged "UR" (undetected, rejected quantitation limit) for all samples.

The following compounds had a percent difference (%D) greater than 25% for the continuing calibration.

Date	Compound	Type	Fraction	%D
05-10	acetone	TCL	volatile	53.2
05-10	2-butanone	TCL	volatile	25.9
05-16	chloromethane	SPCC	volatile	38.7
05-10	carbon disulfide	TCL	volatile	30.2

%D = Percent Difference

Date	Compound	Type	Fraction	%D
05-17	chloromethane	SPCC	volatile	32.2
05-17	acetone	TCL	volatile	42.8
05-17	carbon disulfide	TCL	volatile	33.2
05-17	2-butanone	TCL	volatile	28.6
05-17	2-hexanone	TCL	volatile	27.4
05-25	bis(2-chloroisopropyl)ether	TCL	semivol.	33.6
05-25	bis(2-chloroethoxy)methane	TCL	semivol.	26.8
05-25	2-methylnaphthalene	TCL	semivol.	25.7
05-25	hexachlorocyclopentadiene	TCL	semivol.	58.6
05-25	4-nitrophenol	TCL	semivol.	26.0
05-25	pyrene	TCL	semivol.	25.5
05-25	3,3'-dichlorobenzidene	TCL	semivol.	59.5

%D = Percent Difference

Results for chloromethane, acetone, 2-butanone and carbon disulfide were flagged "J" (estimated) and detection limits "UJ" (undetected, estimated detection limit) for samples JD-403 and JD-404.

Results for chloromethane, acetone, 2-butanone, carbon disulfide and 2-hexanone were flagged "J" (estimated) and detection limits "UJ" (undetected, estimated detection limit) for sample JD-405.

Results for bis(2-chloroisopropyl)ether, bis(2-chloroethoxy)-methane, 2-methylnaphthalene, hexachlorocyclopentadiene, 4-nitrophenol, pyrene, and 3,3'-dichlorobenzidene were flagged "J" (estimated) and detection limits "UJ" (undetected, estimated detection limit) for all samples.

5) Instrument Detection Limits

Instrument detection limits (IDL) were not supplied for any of the analytical equipment.

6) Blanks

The following compounds were found in the blank samples.

Date	Compound	Fraction	Conc. ug/Kg	CRQL ug/Kg	Report Limit
05-10	2-butanone	volatile	9 J	10	45
05-10	toluene	volatile	2 J	5	20
05-16	acetone	volatile	4 J	10	40
05-16	2-butanone	volatile	10	10	50
05-16	toluene	volatile	2 J	5	20
05-17	acetone	volatile	6 J	10	60
05-17	2-butanone	volatile	10	10	50
05-17	toluene	volatile	1 J	5	10
05-25	di-n-butylphthalate	semivol.	1000	330	10,000
05-25	bis(2-ethylhexyl)phthalate	semivol.	85 J	330	850
05-25	4-hydroxy-4-methyl-2-pentanone	SV (TIC)	20,000J	n/a	100,000

J = estimated concentration

CRQL = Contract Required Quantitation Limit

Report Limit = 10 x report for common lab chemicals

5 x report for other compounds

SV (TIC) = semivolatile compound from TIC report

n/a = compound is a TIC, no detection limit has been determined

Values for 2-butanone and toluene less than the Report Limit listed above for 05-10 listed above were flagged "UJ" (undetected, estimated quantitation limit) for samples JD-403 and JD-404.

Values for acetone, 2-butanone and toluene less than the Report Limit listed above for 05-16 were flagged "UJ" (undetected, estimated quantitation limit) for sample JD-405.

Values for acetone, 2-butanone and toluene less than the Report Limit listed above for 05-17 were flagged "UJ" (undetected, estimated quantitation limit) for sample JD-406 and JD-407.

Values for di-n-butylphthalate, bis(2-ethylhexyl)phthalate and 4-hydroxy-4-methyl-2-pentanone less than the report limit listed above for 05-25 were flagged "UJ" (undetected, estimated quantitation limit) for all samples.

The same general types of compounds (Unknown Ketone, Unknown Cyclic Hydrocarbon, Unknown) found in the Tentatively Identified Compound (TIC) list for the semivolatile blank were found at the same relative retention time and approximate concentrations in all of the semivolatile analyses results for the samples. The results were flagged "UJ" (undetected, estimated quantitation limit) for all Unknown flagged TICs for all samples.

7) Pesticide Standards

a) Linearity - Acceptable

The evaluation standards met the contract required limits of a percent relative standard deviation (%RSD) less than 10% for linearity.

b) DDT Retention Time - Acceptable

The retention time for DDT met or exceeded the contract required 12 minutes for the standard runs.

c) Retention Time Windows - Acceptable

The retention time windows met the contract specifications.

d) Analytical Sequence - Acceptable

The analytical sequence met the contract required frequency and order.

e) 4,4'-DDT/Endrin Degradation - Acceptable

The percent breakdown for endrin and DDT did not exceed the contract limit of 20% for the individual or combined breakdown totals.

f) Dibutylchlorendate Retention Time Shift

The percent difference (%D) calculated for the retention time of dibutylchlorendate exceeded 2% for all samples run on the confirmation column. All pesticides have been flagged "R" (rejected) due to the failure of the confirmation column to meet contract specifications.

g) Standards Summary

Several large negative responses were found in the Evaluation Mix A, B and C and Mixed Individual Standards A and B run on the mixed bed quantitation column. The occurrence of the negative response with the standards indicates an analytical problem with the column or detector that should be addressed before the system is used for further analyses. No explanation was given in the cover letter for the package. No action was taken.

8) Surrogate Recovery - Acceptable

The surrogate recoveries for the volatile, semivolatile and pesticide/PCB analyses were within contract advisory limits.

9) Matrix Spike and Matrix Spike Duplicate - Acceptable

The matrix spike (MS) and matrix spike duplicate (MSD) analyses for the volatiles and semivolatiles were within contract advisory limits.

The following pesticide spike compounds did not meet contract required recovery limits due to matrix interference.

Sample	Compound	Matrix	Fraction	%R	QC Limits
JD-403	lindane	soil	pesticide	0	46 - 127%
JD-403	heptachlor	soil	pesticide	0	35 - 130%
JD-403	aldrin	soil	pesticide	0	34 - 132%

%R = Percent Recovery

All positive values for lindane, heptachlor and aldrin have been flagged "J" (estimated) and detection limits have been flagged "UR" (undetected, rejected detection limit) for sample JD-403.

10) Sample Analysis

The dimensions of the spectra supplied made confirmation of the mass spectra identifications difficult. No action was taken.

A note stating "Bromomethane Contaminant" was added to the confirmation spectra for volatile compound 2-butanone in sample JD-407 and the volatile blanks run on 5-16 and 5-17. Bromomethane is not a spiking or surrogate compound. No explanation was given in the cover letter for the package. No action was taken.

There was little correlation between the 2-butanone values from JD-405 and the dilution analyses, JD-405RE. No action was taken.

11) Laboratory Contact - No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Organics and pesticides/PCB Analyses" (R-582-5-5-01).

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of the individual values.

Data Qualifiers

- U - The material was analyzed for, but was not detected. The associated numerical value is an estimated sample quantitation limit.
- J - The associated numerical value is an estimated quantity because quality control criteria were not met or concentrations reported were less than the CRQL.
- R - Quality Control indicates that data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.
- N - Presumptive evidence of presence of material (tentative identification).
- M - Mass spectral criteria for positive identification were not met. However, in the opinion of the laboratory, the identification is correct based on the analyst's professional judgment.

ORG/9504

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD403

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 5. (g/mL) G

Lab File ID: A1047

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 20.

Date Analyzed: 5/10/88

Column: (pack/cap) PACK

Dilution Factor: .9960

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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74-87-3	Chloromethane	12.	UJ
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	15.	J
75-15-0	Carbon Disulfide	6.	UJ
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	11.	UJ
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	2.	J
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	2.	UJ
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

JEN
6/22/88

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD403

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 5. (g/mL) G

Lab File ID: A1047

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 20.

Date Analyzed: 5/10/88

Column: (pack/cap) PACK

Dilution Factor: .9960

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD403

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC232

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 30. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N pH: 7.7

Dilution Factor: 1.0000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	470.	U
111-44-4	bis(2-Chloroethyl) ether	470.	U
95-57-8	2-Chlorophenol	470.	U
541-73-1	1,3-Dichlorobenzene	470.	U
106-46-7	1,4-Dichlorobenzene	470.	U
100-51-6	Benzyl alcohol	470.	U
95-50-1	1,2-Dichlorobenzene	470.	U
95-48-7	2-Methylphenol	470.	U
108-60-1	bis(2-chloroisopropyl) ether	470.	U
106-44-5	4-Methylphenol	470.	U
621-64-7	N-Nitroso-di-n-propylamine	470.	U
67-72-1	Hexachloroethane	470.	U
98-95-3	Nitrobenzene	470.	U
78-59-1	Isophorone	470.	U
88-75-5	2-Nitrophenol	470.	U
105-67-9	2,4-Dimethylphenol	470.	U
65-85-0	Benzoic acid	2400.	U
111-91-1	bis(2-Chloroethoxy) methane	470.	U
120-83-2	2,4-Dichlorophenol	470.	U
120-82-1	1,2,4-Trichlorobenzene	470.	U
91-20-3	Naphthalene	470.	U
106-47-8	4-Chloroaniline	470.	U
87-68-3	Hexachlorobutadiene	470.	U
59-50-7	4-Chloro-3-methylphenol	470.	U
91-57-6	2-Methylnaphthalene	470.	U
77-47-4	Hexachlorocyclopentadiene	470.	U
88-06-2	2,4,6-Trichlorophenol	470.	U
95-95-4	2,4,5-Trichlorophenol	2400.	U
91-58-7	2-Chloronaphthalene	470.	U
88-74-4	2-Nitroaniline	2400.	U
131-11-3	Dimethylphthalate	470.	U
208-96-8	Acenaphthylene	470.	U
606-20-2	2,6-Dinitrotoluene	470.	U

JEN
6/22

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JD403

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC232

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 30. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N

pH: 7.7

Dilution Factor: 1.0000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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99-09-2	3-Nitroaniline	2400.	UJ
83-32-9	Acenaphthene	470.	U
51-28-5	2,4-Dinitrophenol	2400.	U
100-02-7	4-Nitrophenol	2400.	U
132-64-9	Dibenzofuran	470.	U
121-14-2	2,4-Dinitrotoluene	470.	U
84-66-2	Diethylphthalate	470.	U
7005-72-3	4-Chlorophenyl-phenylether	470.	U
86-73-7	Fluorene	470.	U
100-01-6	4-Nitroaniline	2400.	U
534-52-1	4,6-Dinitro-2-methylphenol	2400.	U
86-30-6	N-Nitrosodiphenylamine (1)	470.	U
101-55-3	4-Bromophenyl-phenylether	470.	U
118-74-1	Hexachlorobenzene	470.	U
87-86-5	Pentachlorophenol	2400.	U
85-01-8	Phenanthrene	470.	U
120-12-7	Anthracene	470.	U
84-74-2	Di-n-butylphthalate	2100.	UJ
206-44-0	Fluoranthene	470.	UJ
129-00-0	Pyrene	470.	U
85-68-7	Butylbenzylphthalate	470.	U
91-94-1	3,3'-Dichlorobenzidine	940.	U
56-55-3	Benzo(a)anthracene	470.	U
117-81-7	bis(2-Ethylhexyl)phthalate	100.	UJ
218-01-9	Chrysene	470.	UJ
117-84-0	Di-n-octylphthalate	470.	U
205-99-2	Benzo(b)fluoranthene	470.	U
207-08-9	Benzo(k)fluoranthene	470.	U
50-32-8	Benzo(a)pyrene	470.	U
193-39-5	Indeno(1,2,3-cd)pyrene	470.	U
53-70-3	Dibenzo(a,h)anthracene	470.	U
191-24-2	Benzo(g,h,i)perylene	470.	U

(1) - Cannot be separated from diphenylamine

JEN
6/22/8

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

JD403

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC232

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 30. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N pH: 7.7

Dilution Factor: 1.0000

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 5

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN KETONE	6.48	400.	UJ
2. 123-42-2	4-HYDROXY-4-METHYL-2-PENTANO	7.19	20000.	UJ
3. - -	UNKNOWN KETONE	8.81	300.	UJ
4. - -	UNKNOWN	10.20	800.	UJ
5. - -	UNKNOWN CYCLIC HYDROCARBON	28.28	2000.	UJ
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

Lab Name: ECOVA Corporation Contract: 6A-W-6-0018

J0403

Lab Code: ECOVA Case No.: 9504 SAS No.: N/A SDG No.: J0403

Matrix: (soil/water) Soil Lab Sample ID: J0403

Sample wt/vol: 30.08 (g/mL) g Lab File ID: _____

Level: (low/med) LOW Date Received: 05/09/88

% Moisture: not dec. 20 dec. _____ Date Extracted: 05/10/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/25/88

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/kg</u>	Q
319-84-6	alpha-BHC	10.0	R
319-85-7	beta-BHC	10.0	
319-86-8	delta-BHC	10.0	
58-89-9	gamma-BHC (Lindane)	10.0	
76-44-8	Heptachlor	10.0	
309-00-2	Aldrin	10.0	
1024-57-3	Heptachlor epoxide	10.0	
959-98-8	Endosulfan I	10.0	
60-57-1	Dieldrin	20.0	
72-55-9	4,4'-DDE	20.0	
72-20-8	Endrin	20.0	
33213-65-9	Endosulfan II	20.0	
72-54-8	4,4'-DDD	20.0	
1031-07-8	Endosulfan sulfate	20.0	
50-29-3	4,4'-DDT	20.0	
72-43-5	Methoxychlor	100.0	
53494-70-5	Endrin ketone	20.0	
5103-71-9	alpha-Chlordane	100.0	
5103-74-2	gamma-Chlordane	100.0	
8001-35-2	Toxaphene	200.0	
12674-11-2	Aroclor-1016	100.0	
11104-28-2	Aroclor-1221	100.0	
11141-16-5	Aroclor-1232	100.0	
53469-21-9	Aroclor-1242	100.0	
12672-29-6	Aroclor-1248	100.0	
11097-69-1	Aroclor-1254	200.0	
11096-82-5	Aroclor-1260	200.0	

JEN
6/22/88

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD404

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 5. (g/mL) G

Lab File ID: A1048

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8.

Date Analyzed: 5/10/88

Column: (pack/cap) PACK

Dilution Factor: .9960

		CONCENTRATION UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11.	UJ
74-83-9	Bromomethane	11.	U
75-01-4	Vinyl Chloride	11.	U
75-00-3	Chloroethane	11.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	47.	J
75-15-0	Carbon Disulfide	5.	UJ
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	25.	UJ
71-55-6	1,1,1-Trichloroethane	1.	J
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	11.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	11.	U
591-78-6	2-Hexanone	11.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	3.	W
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

JEA
6/22/

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD404

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 5. (g/mL) G

Lab File ID: A1048

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8.

Date Analyzed: 5/10/88

Column: (pack/cap) PACK

Dilution Factor: .9960

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD404

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC233

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N pH: 7.1

Dilution Factor: 1.0000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360.	U
111-44-4	bis(2-Chloroethyl) ether	360.	U
95-57-8	2-Chlorophenol	360.	U
541-73-1	1,3-Dichlorobenzene	360.	U
106-46-7	1,4-Dichlorobenzene	360.	U
100-51-6	Benzyl alcohol	360.	U
95-50-1	1,2-Dichlorobenzene	360.	U
95-48-7	2-Methylphenol	360.	U
108-60-1	bis(2-chloroisopropyl) ether	360.	U
106-44-5	4-Methylphenol	360.	U
621-64-7	N-Nitroso-di-n-propylamine	360.	U
67-72-1	Hexachloroethane	360.	U
98-95-3	Nitrobenzene	360.	U
78-59-1	Isophorone	360.	U
88-75-5	2-Nitrophenol	360.	U
105-67-9	2,4-Dimethylphenol	360.	U
65-85-0	Benzoic acid	1800.	U
111-91-1	bis(2-Chloroethoxy) methane	360.	U
120-83-2	2,4-Dichlorophenol	360.	U
120-82-1	1,2,4-Trichlorobenzene	360.	U
91-20-3	Naphthalene	360.	U
106-47-8	4-Chloroaniline	360.	U
87-68-3	Hexachlorobutadiene	360.	U
59-50-7	4-Chloro-3-methylphenol	360.	U
91-57-6	2-Methylnaphthalene	360.	U
77-47-4	Hexachlorocyclopentadiene	360.	U
88-06-2	2,4,6-Trichlorophenol	360.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U
91-58-7	2-Chloronaphthalene	360.	U
88-74-4	2-Nitroaniline	1800.	U
131-11-3	Dimethylphthalate	360.	U
208-96-8	Acenaphthylene	360.	U
606-20-2	2,6-Dinitrotoluene	360.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD404

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC233

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N pH: 7.1

Dilution Factor: 1.0000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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99-09-2	3-Nitroaniline	1800.	UJ
83-32-9	Acenaphthene	360.	U
51-28-5	2,4-Dinitrophenol	1800.	U
100-02-7	4-Nitrophenol	1800.	U
132-64-9	Dibenzofuran	360.	U
121-14-2	2,4-Dinitrotoluene	360.	U
84-66-2	Diethylphthalate	360.	U
7005-72-3	4-Chlorophenyl-phenylether	360.	U
86-73-7	Fluorene	360.	U
100-01-6	4-Nitroaniline	1800.	U
534-52-1	4,6-Dinitro-2-methylphenol	1800.	U
86-30-6	N-Nitrosodiphenylamine (1)	360.	U
101-55-3	4-Bromophenyl-phenylether	360.	U
118-74-1	Hexachlorobenzene	360.	U
87-86-5	Pentachlorophenol	1800.	U
85-01-8	Phenanthrene	360.	U
120-12-7	Anthracene	360.	U
84-74-2	Di-n-butylphthalate	1600.	UJ
206-44-0	Fluoranthene	360.	UJ
129-00-0	Pyrene	360.	U
85-68-7	Butylbenzylphthalate	360.	U
91-94-1	3,3'-Dichlorobenzidine	730.	U
56-55-3	Benzo(a)anthracene	360.	U
117-81-7	bis(2-Ethylhexyl)phthalate	110.	UJ
218-01-9	Chrysene	360.	UJ
117-84-0	Di-n-octylphthalate	360.	U
205-99-2	Benzo(b)fluoranthene	360.	U
207-08-9	Benzo(k)fluoranthene	360.	U
50-32-8	Benzo(a)pyrene	360.	U
193-39-5	Indeno(1,2,3-cd)pyrene	360.	U
53-70-3	Dibenzo(a,h)anthracene	360.	U
191-24-2	Benzo(g,h,i)perylene	360.	U

(1) - Cannot be separated from diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JD404

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC233

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N pH: 7.1

Dilution Factor: 1.0000

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 5

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN KETONE	6.49	300.	WJ
2. 123-42-2	4-HYDROXY-4-METHYL-2-PENTANO	7.22	20000.	WJ
3. - -	UNKNOWN KETONE	8.81	300.	WJ
4. - -	UNKNOWN	10.20	600.	WJ
5. 10544-50-0	Sulfur, mol. (S8) (8CI9CI)	28.33	2000.	J
6.				
7.				
8.				
9.				
10.				
11.				
12.				
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

Lab Name: ECOVA Corporation Contract: 68-W-6-0018

JD404

Lab Code: ECOVA Case No.: 9504 SAS No.: N/A SDG No.: JD403

Matrix: (soil/water) soil

Lab Sample ID: JD404

Sample wt/vol: 30.09 (g/mL) g

Lab File ID: _____

Level: (low/med) low

Date Received: 05/09/88

% Moisture: not dec. 8 dec. _____

Date Extracted: 05/10/88

Extraction: (SepF/Cont/Sonc) Sonc

Date Analyzed: 05/25/88

GPC Cleanup: (Y/N) N pH: 7.1

Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/kg</u>	Q
---------	----------	--	---

319-84-6	alpha-BHC	8.7	R
319-85-7	beta-BHC	8.7	
319-86-8	delta-BHC	8.7	
58-89-9	gamma-BHC (Lindane)	8.7	
76-44-8	Heptachlor	8.7	
309-00-2	Aldrin	8.7	
1024-57-3	Heptachlor epoxide	8.7	
959-98-8	Endosulfan I	8.7	
60-57-1	Dieldrin	17.0	
72-55-9	4,4'-DDE	17.0	
72-20-8	Endrin	17.0	
33213-65-9	Endosulfan II	17.0	
72-54-8	4,4'-DDD	17.0	
1031-07-8	Endosulfan sulfate	17.0	
50-29-3	4,4'-DDT	17.0	
72-43-5	Methoxychlor	87.0	
53494-70-5	Endrin ketone	17.0	
5103-71-9	alpha-Chlordane	87.0	
5103-74-2	gamma-Chlordane	87.0	
8001-35-2	Toxaphene	170.0	
12674-11-2	Aroclor-1016	87.0	JSA 6/22/
11104-28-2	Aroclor-1221	87.0	
11141-16-5	Aroclor-1232	87.0	
53469-21-9	Aroclor-1242	87.0	
12672-29-6	Aroclor-1248	87.0	
11097-69-1	Aroclor-1254	170.0	
11096-82-5	Aroclor-1260	170.0	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD405

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 5. (g/mL) G

Lab File ID: A1079

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8.

Date Analyzed: 5/16/88

Column: (pack/cap) PACK

Dilution Factor: .9900

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	-----Chloromethane	11.	UJ
74-83-9	-----Bromomethane	11.	U
75-01-4	-----Vinyl Chloride	11.	U
75-00-3	-----Chloroethane	11.	U
75-09-2	-----Methylene Chloride	5.	UJ
67-64-1	-----Acetone	190.	J
75-15-0	-----Carbon Disulfide	5.	UJ
75-35-4	-----1,1-Dichloroethene	5.	U
75-34-3	-----1,1-Dichloroethane	5.	U
540-59-0	-----1,2-Dichloroethene (total)	5.	U
67-66-3	-----Chloroform	5.	U
107-06-2	-----1,2-Dichloroethane	5.	U
78-93-3	-----2-Butanone		
71-55-6	-----1,1,1-Trichloroethane	1.	J
56-23-5	-----Carbon Tetrachloride	5.	UJ
108-05-4	-----Vinyl Acetate	11.	U
75-27-4	-----Bromodichloromethane	5.	U
78-87-5	-----1,2-Dichloropropane	5.	U
10061-01-5	-----cis-1,3-Dichloropropene	5.	U
79-01-6	-----Trichloroethene	5.	U
124-48-1	-----Dibromochloromethane	5.	U
79-00-5	-----1,1,2-Trichloroethane	5.	U
71-43-2	-----Benzene	5.	U
10061-02-6	-----trans-1,3-Dichloropropene	5.	U
75-25-2	-----Bromoform	5.	U
108-10-1	-----4-Methyl-2-Pentanone	8.	J
591-78-6	-----2-Hexanone	11.	UJ
127-18-4	-----Tetrachloroethene	5.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	5.	U
108-88-3	-----Toluene	1.	UJ
108-90-7	-----Chlorobenzene	5.	UJ
100-41-4	-----Ethylbenzene	5.	U
100-42-5	-----Styrene	5.	U
1330-20-7	-----Xylene (total)	5.	U

JEM
6/22/88

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD405

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 5. (g/mL) G

Lab File ID: A1079

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8.

Date Analyzed: 5/16/88

Column: (pack/cap) PACK

Dilution Factor: .9900

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD405 RE

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 1. (g/mL) G

Lab File ID: A1081

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8.

Date Analyzed: 5/16/88

Column: (pack/cap) PACK

Dilution Factor: .2000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
---------	----------	---	---

74-87-3	-----Chloromethane		
74-83-9	-----Bromomethane		
75-01-4	-----Vinyl Chloride		
75-00-3	-----Chloroethane		
75-09-2	-----Methylene Chloride		
67-64-1	-----Acetone		
75-15-0	-----Carbon Disulfide		
75-35-4	-----1,1-Dichloroethene		
75-34-3	-----1,1-Dichloroethane		
540-59-0	-----1,2-Dichloroethene (total)		
67-66-3	-----Chloroform		
107-06-2	-----1,2-Dichloroethane		
78-93-3	-----2-Butanone	150.	J
71-55-6	-----1,1,1-Trichloroethane		
56-23-5	-----Carbon Tetrachloride		
108-05-4	-----Vinyl Acetate		
75-27-4	-----Bromodichloromethane		
78-87-5	-----1,2-Dichloropropane		
10061-01-5	-----cis-1,3-Dichloropropene		
79-01-6	-----Trichloroethene		
124-48-1	-----Dibromochloromethane		
79-00-5	-----1,1,2-Trichloroethane		
71-43-2	-----Benzene		
10061-02-6	-----trans-1,3-Dichloropropene		
75-25-2	-----Bromoform		
108-10-1	-----4-Methyl-2-Pentanone		
591-78-6	-----2-Hexanone		
127-18-4	-----Tetrachloroethene		
79-34-5	-----1,1,2,2-Tetrachloroethane		
108-88-3	-----Toluene		
108-90-7	-----Chlorobenzene		
100-41-4	-----Ethylbenzene		
100-42-5	-----Styrene		
1330-20-7	-----Xylene (total)		

SENT
6/24/88

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD405 RE

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 1. (g/mL) G

Lab File ID: A1081

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8.

Date Analyzed: 5/16/88

Column: (pack/cap) PACK

Dilution Factor: .2000

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD405

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC234

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N pH: 6.3

Dilution Factor: 1.0000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
---------	----------	---	---

108-95-2	Phenol	360.	U
111-44-4	bis(2-Chloroethyl) ether	360.	U
95-57-8	2-Chlorophenol	360.	U
541-73-1	1,3-Dichlorobenzene	360.	U
106-46-7	1,4-Dichlorobenzene	360.	U
100-51-6	Benzyl alcohol	360.	U
95-50-1	1,2-Dichlorobenzene	360.	U
95-48-7	2-Methylphenol	360.	U
108-60-1	bis(2-chloroisopropyl) ether	360.	U
106-44-5	4-Methylphenol	360.	U
621-64-7	N-Nitroso-di-n-propylamine	360.	U
67-72-1	Hexachloroethane	360.	U
98-95-3	Nitrobenzene	360.	U
78-59-1	Isophorone	360.	U
88-75-5	2-Nitrophenol	360.	U
105-67-9	2,4-Dimethylphenol	360.	U
65-85-0	Benzoic acid	1800.	U
111-91-1	bis(2-Chloroethoxy) methane	360.	U
120-83-2	2,4-Dichlorophenol	360.	U
120-82-1	1,2,4-Trichlorobenzene	360.	U
91-20-3	Naphthalene	360.	U
106-47-8	4-Chloroaniline	360.	U
87-68-3	Hexachlorobutadiene	360.	U
59-50-7	4-Chloro-3-methylphenol	360.	U
91-57-6	2-Methylnaphthalene	360.	U
77-47-4	Hexachlorocyclopentadiene	360.	U
88-06-2	2,4,6-Trichlorophenol	360.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U
91-58-7	2-Chloronaphthalene	360.	U
88-74-4	2-Nitroaniline	1800.	U
131-11-3	Dimethylphthalate	360.	U
208-96-8	Acenaphthylene	360.	U
606-20-2	2,6-Dinitrotoluene	360.	U

JEH
6/22/88

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JD405

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC234

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N

pH: 6.3

Dilution Factor: 1.0000

		CONCENTRATION UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
99-09-2-----	3-Nitroaniline	1800.	UJ
83-32-9-----	Acenaphthene	360.	U
51-28-5-----	2,4-Dinitrophenol	1800.	U
100-02-7-----	4-Nitrophenol	1800.	U
132-64-9-----	Dibenzofuran	360.	U
121-14-2-----	2,4-Dinitrotoluene	360.	U
84-66-2-----	Diethylphthalate	360.	U
7005-72-3-----	4-Chlorophenyl-phenylether	360.	U
86-73-7-----	Fluorene	360.	U
100-01-6-----	4-Nitroaniline	1800.	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1800.	U
86-30-6-----	N-Nitrosodiphenylamine (1)	360.	U
101-55-3-----	4-Bromophenyl-phenylether	360.	U
118-74-1-----	Hexachlorobenzene	360.	U
87-86-5-----	Pentachlorophenol	1800.	U
85-01-8-----	Phenanthrene	360.	U
120-12-7-----	Anthracene	360.	U
84-74-2-----	Di-n-butylphthalate	2000.	UJ
206-44-0-----	Fluoranthene	360.	UJ
129-00-0-----	Pyrene	360.	U
85-68-7-----	Butylbenzylphthalate	360.	U
91-94-1-----	3,3'-Dichlorobenzidine	720.	U
56-55-3-----	Benzo(a)anthracene	360.	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	97.	UJ
218-01-9-----	Chrysene	360.	UJ
117-84-0-----	Di-n-octylphthalate	54.	J
205-99-2-----	Benzo(b)fluoranthene	360.	UJ
207-08-9-----	Benzo(k)fluoranthene	360.	U
50-32-8-----	Benzo(a)pyrene	360.	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	360.	U
53-70-3-----	Dibenzo(a,h)anthracene	360.	U
191-24-2-----	Benzo(g,h,i)perylene	360.	U

(1) - Cannot be separated from diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JD405

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC234

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N pH: 6.3

Dilution Factor: 1.0000

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 5

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN KETONE	6.52	300.	WJ
2. 123-42-2	4-HYDROXY-4-METHLY-2-PENTANO	7.24	20000.	WJ
3. - -	UNKNOWN KETONE	8.82	300.	WJ
4. - -	UNKNOWN	10.20	700.	WJ
5. 10544-50-0	SULFUR, MOL. (S8)	28.34	400.	J
6.				
7.				
8.				
9.				
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

Lab Name: ECOVA Corporation Contract: 68-WB-0018

J0405

Lab Code: ECOVA Case No.: 9504 SAS No.: N/A SDG No.: JD403

Matrix: (soil/water) Soil

Lab Sample ID: J0405

Sample wt/vol: 30.06 (g/mL) g

Lab File ID: _____

Level: (low/med) LOW

Date Received: 05/09/88

% Moisture: not dec. 8 dec. _____

Date Extracted: 05/10/88

Extraction: (SepF/Cont/Sonc) _____

Date Analyzed: 05/25/88

GPC Cleanup: (Y/N) N pH: 6.3

Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/kg</u>	g
319-84-6	alpha-BHC	8.7	R
319-85-7	beta-BHC	8.7	
319-86-8	delta-BHC	8.7	
58-89-9	gamma-BHC (Lindane)	8.7	
76-44-8	Heptachlor	8.7	
309-00-2	Aldrin	8.7	
1024-57-3	Heptachlor epoxide	8.7	
959-98-8	Endosulfan I	8.7	
60-57-1	Dieldrin	17.0	
72-55-9	4,4'-DDE	17.0	
72-20-8	Endrin	17.0	
33213-65-9	Endosulfan II	17.0	
72-54-8	4,4'-DDD	17.0	
1031-07-8	Endosulfan sulfate	17.0	
50-29-3	4,4'-DDT	17.0	
72-43-5	Methoxychlor	87.0	
53494-70-5	Endrin ketone	17.0	
5103-71-9	alpha-Chlordane	87.0	
5103-74-2	gamma-Chlordane	87.0	
8001-35-2	Toxaphene	170.0	
12674-11-2	Aroclor-1016	87.0	V
11104-28-2	Aroclor-1221	87.0	
11141-16-5	Aroclor-1232	87.0	
53469-21-9	Aroclor-1242	87.0	
12672-29-6	Aroclor-1248	87.0	
11097-69-1	Aroclor-1254	170.0	
11096-82-5	Aroclor-1260	170.0	

JEH
6/22/88

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD406

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 2. (g/mL) G

Lab File ID: A1089

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8.

Date Analyzed: 5/17/88

Column: (pack/cap) PACK

Dilution Factor: .4080

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
---------	----------	---	---

74-87-3	-----Chloromethane	26.	UJ
74-83-9	-----Bromomethane	26.	U
75-01-4	-----Vinyl Chloride	26.	U
75-00-3	-----Chloroethane	26.	U
75-09-2	-----Methylene Chloride	13.	U
67-64-1	-----Acetone	370.	J
75-15-0	-----Carbon Disulfide	13.	UJ
75-35-4	-----1,1-Dichloroethene	13.	U
75-34-3	-----1,1-Dichloroethane	13.	U
540-59-0	-----1,2-Dichloroethene (total)	13.	U
67-66-3	-----Chloroform	13.	U
107-06-2	-----1,2-Dichloroethane	13.	U
78-93-3	-----2-Butanone	29.	UJ
71-55-6	-----1,1,1-Trichloroethane	13.	UJ
56-23-5	-----Carbon Tetrachloride	13.	U
108-05-4	-----Vinyl Acetate	26.	U
75-27-4	-----Bromodichloromethane	13.	U
78-87-5	-----1,2-Dichloropropane	13.	U
10061-01-5	-----cis-1,3-Dichloropropene	13.	U
79-01-6	-----Trichloroethene	13.	U
124-48-1	-----Dibromochloromethane	13.	U
79-00-5	-----1,1,2-Trichloroethane	13.	U
71-43-2	-----Benzene	13.	U
10061-02-6	-----trans-1,3-Dichloropropene	13.	U
75-25-2	-----Bromoform	13.	U
108-10-1	-----4-Methyl-2-Pentanone	26.	U
591-78-6	-----2-Hexanone	26.	U
127-18-4	-----Tetrachloroethene	13.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	13.	U
108-88-3	-----Toluene	4.	UJ
108-90-7	-----Chlorobenzene	13.	UJ
100-41-4	-----Ethylbenzene	13.	U
100-42-5	-----Styrene	13.	U
1330-20-7	-----Xylene (total)	13.	U

JSH
4/22/88

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD406

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 2. (g/mL) G

Lab File ID: A1089

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8.

Date Analyzed: 5/17/88

Column: (pack/cap) PACK

Dilution Factor: .4080

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD406

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC235

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N pH: 8.0

Dilution Factor: 1.0000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360.	UJ
111-44-4	bis(2-Chloroethyl) ether	360.	U
95-57-8	2-Chlorophenol	360.	U
541-73-1	1,3-Dichlorobenzene	360.	U
106-46-7	1,4-Dichlorobenzene	360.	U
100-51-6	Benzyl alcohol	360.	U
95-50-1	1,2-Dichlorobenzene	360.	U
95-48-7	2-Methylphenol	360.	U
108-60-1	bis(2-chloroisopropyl) ether	360.	U
106-44-5	4-Methylphenol	360.	U
621-64-7	N-Nitroso-di-n-propylamine	360.	U
67-72-1	Hexachloroethane	360.	U
98-95-3	Nitrobenzene	360.	U
78-59-1	Isophorone	360.	U
88-75-5	2-Nitrophenol	360.	U
105-67-9	2,4-Dimethylphenol	360.	U
65-85-0	Benzoic acid	1800.	U
111-91-1	bis(2-Chloroethoxy) methane	360.	U
120-83-2	2,4-Dichlorophenol	360.	U
120-82-1	1,2,4-Trichlorobenzene	360.	U
91-20-3	Naphthalene	360.	U
106-47-8	4-Chloroaniline	360.	U
87-68-3	Hexachlorobutadiene	360.	U
59-50-7	4-Chloro-3-methylphenol	360.	U
91-57-6	2-Methylnaphthalene	360.	U
77-47-4	Hexachlorocyclopentadiene	360.	U
88-06-2	2,4,6-Trichlorophenol	360.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U
91-58-7	2-Chloronaphthalene	360.	U
88-74-4	2-Nitroaniline	1800.	U
131-11-3	Dimethylphthalate	360.	U
208-96-8	Acenaphthylene	360.	U
606-20-2	2,6-Dinitrotoluene	360.	U

gent
6/22/88

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD406

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC235

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N pH: 8.0

Dilution Factor: 1.0000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1800.	UJ
83-32-9	Acenaphthene	360.	U
51-28-5	2,4-Dinitrophenol	1800.	U
100-02-7	4-Nitrophenol	1800.	U
132-64-9	Dibenzofuran	360.	U
121-14-2	2,4-Dinitrotoluene	360.	U
84-66-2	Diethylphthalate	360.	U
7005-72-3	4-Chlorophenyl-phenylether	360.	U
86-73-7	Fluorene	360.	U
100-01-6	4-Nitroaniline	1800.	U
534-52-1	4,6-Dinitro-2-methylphenol	1800.	U
86-30-6	N-Nitrosodiphenylamine (1)	360.	U
101-55-3	4-Bromophenyl-phenylether	360.	U
118-74-1	Hexachlorobenzene	360.	U
87-86-5	Pentachlorophenol	1800.	U
85-01-8	Phenanthrene	360.	U
120-12-7	Anthracene	360.	U
84-74-2	Di-n-butylphthalate	1800.	UJ
206-44-0	Fluoranthene	360.	UJ
129-00-0	Pyrene	360.	U
85-68-7	Butylbenzylphthalate	360.	U
91-94-1	3,3'-Dichlorobenzidine	720.	U
56-55-3	Benzo(a)anthracene	360.	U
117-81-7	bis(2-Ethylhexyl)phthalate	97.	UJ
218-01-9	Chrysene	360.	UJ
117-84-0	Di-n-octylphthalate	360.	U
205-99-2	Benzo(b)fluoranthene	360.	U
207-08-9	Benzo(k)fluoranthene	360.	U
50-32-8	Benzo(a)pyrene	360.	U
193-39-5	Indeno(1,2,3-cd)pyrene	360.	U
53-70-3	Dibenzo(a,h)anthracene	360.	U
191-24-2	Benzo(g,h,i)perylene	360.	U

(1) - Cannot be separated from diphenylamine

JEN
6/22/88

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JD406

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC235

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/25/88

GPC Cleanup: (Y/N) N pH: 8.0

Dilution Factor: 1.0000

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 6

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN KETONE	6.48	300.	WJ
2. 123-42-2	4-HYDROXY-4-METHYL-2-PENTANO	7.21	20000.	WJ
3. - -	UNKNOWN KETONE	8.81	300.	WJ
4. - -	UNKNOWN	10.20	600.	WJ
5. 10544-50-0	Sulfur, mol. (S8) (8CI9CI)	28.37	600.	J
6. - -	UNKNOWN CYCLIC HYDROCARBON	28.61	200.	WJ
7. - -				
8. - -				
9. - -				
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: ECOVA Corporation Contract: 68-W-8-0018 JD406
 Lab Code: ECOVA Case No.: 9504 SAS No.: N/A SDG No.: JD403
 Matrix: (soil/water) Soil Lab Sample ID: JD406
 Sample wt/vol: 30.04 (g/mL) g Lab File ID: _____
 Level: (low/med) low Date Received: 05/09/88
 % Moisture: not dec. 8 dec. _____ Date Extracted: 05/18/88
 Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 05/25/88
 GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/kg g

319-84-6	alpha-BHC	8.6	R
319-85-7	beta-BHC	8.6	
319-86-8	delta-BHC	8.6	
58-89-9	gamma-BHC (Lindane)	8.6	
76-44-8	Heptachlor	8.6	
309-00-2	Aldrin	8.6	
1024-57-3	Heptachlor epoxide	8.6	
959-98-8	Endosulfan I	8.6	
60-57-1	Dieldrin	17.0	
72-55-9	4,4'-DDE	17.0	
72-20-8	Endrin	17.0	
33213-65-9	Endosulfan II	17.0	
72-54-8	4,4'-DDD	17.0	
1031-07-8	Endosulfan sulfate	6.6	
50-29-3	4,4'-DDT	17.0	
72-43-5	Methoxychlor	86.0	
53494-70-5	Endrin ketone	17.0	
5103-71-9	alpha-Chlordane	86.0	
5103-74-2	gamma-Chlordane	86.0	
8001-35-2	Toxaphene	170.0	
12674-11-2	Aroclor-1016	86.0	↓
11104-28-2	Aroclor-1221	86.0	
11141-16-5	Aroclor-1232	86.0	
53469-21-9	Aroclor-1242	86.0	
12672-29-6	Aroclor-1248	86.0	
11097-69-1	Aroclor-1254	170.0	
11096-82-5	Aroclor-1260	170.0	

JEH
6/22

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD407

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 5. (g/mL) G

Lab File ID: A1094

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8.

Date Analyzed: 5/17/88

Column: (pack/cap) PACK

Dilution Factor: .9140

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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74-87-3	Chloromethane	12.	UJ
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	21.	UJ
75-15-0	Carbon Disulfide	6.	UJ
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	7.	UJ
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	2.	UJ
108-90-7	Chlorobenzene	6.	UJ
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

JEH
6/22/88

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD407

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 5. (g/mL) G

Lab File ID: A1094

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8.

Date Analyzed: 5/17/88

Column: (pack/cap) PACK

Dilution Factor: .9140

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD407

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC238

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/26/88

GPC Cleanup: (Y/N) N pH: 7.7

Dilution Factor: 1.0000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360.	U J
111-44-4	bis(2-Chloroethyl) ether	360.	U
95-57-8	2-Chlorophenol	360.	U
541-73-1	1,3-Dichlorobenzene	360.	U
106-46-7	1,4-Dichlorobenzene	360.	U
100-51-6	Benzyl alcohol	360.	U
95-50-1	1,2-Dichlorobenzene	360.	U
95-48-7	2-Methylphenol	360.	U
108-60-1	bis(2-chloroisopropyl) ether	360.	U
106-44-5	4-Methylphenol	360.	U
621-64-7	N-Nitroso-di-n-propylamine	360.	U
67-72-1	Hexachloroethane	360.	U
98-95-3	Nitrobenzene	360.	U
78-59-1	Isophorone	360.	U
88-75-5	2-Nitrophenol	360.	U
105-67-9	2,4-Dimethylphenol	360.	U
65-85-0	Benzoic acid	1800.	U
111-91-1	bis(2-Chloroethoxy) methane	360.	U
120-83-2	2,4-Dichlorophenol	360.	U
120-82-1	1,2,4-Trichlorobenzene	360.	U
91-20-3	Naphthalene	360.	U
106-47-8	4-Chloroaniline	360.	U
87-68-3	Hexachlorobutadiene	360.	U
59-50-7	4-Chloro-3-methylphenol	360.	U
91-57-6	2-Methylnaphthalene	360.	U
77-47-4	Hexachlorocyclopentadiene	360.	U
88-06-2	2,4,6-Trichlorophenol	360.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U
91-58-7	2-Chloronaphthalene	360.	U
88-74-4	2-Nitroaniline	1800.	U
131-11-3	Dimethylphthalate	360.	U
208-96-8	Acenaphthylene	360.	U
606-20-2	2,6-Dinitrotoluene	360.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD407

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC238

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/26/88

GPC Cleanup: (Y/N) N pH: 7.7

Dilution Factor: 1.0000

		CONCENTRATION UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1800.	UJ
83-32-9	Acenaphthene	360.	U
51-28-5	2,4-Dinitrophenol	1800.	U
100-02-7	4-Nitrophenol	1800.	U
132-64-9	Dibenzofuran	360.	U
121-14-2	2,4-Dinitrotoluene	360.	U
84-66-2	Diethylphthalate	360.	U
7005-72-3	4-Chlorophenyl-phenylether	360.	U
86-73-7	Fluorene	360.	U
100-01-6	4-Nitroaniline	1800.	U
534-52-1	4,6-Dinitro-2-methylphenol	1800.	U
86-30-6	N-Nitrosodiphenylamine (1)	360.	U
101-55-3	4-Bromophenyl-phenylether	360.	U
118-74-1	Hexachlorobenzene	360.	U
87-86-5	Pentachlorophenol	1800.	U
85-01-8	Phenanthrene	360.	U
120-12-7	Anthracene	360.	U
84-74-2	Di-n-butylphthalate	1800.	UJ
206-44-0	Fluoranthene	360.	UJ
129-00-0	Pyrene	360.	U
85-68-7	Butylbenzylphthalate	360.	U
91-94-1	3,3'-Dichlorobenzidine	720.	U
56-55-3	Benzo(a)anthracene	360.	U
117-81-7	bis(2-Ethylhexyl)phthalate	87.	UJ
218-01-9	Chrysene	360.	UJ
117-84-0	Di-n-octylphthalate	360.	U
205-99-2	Benzo(b)fluoranthene	360.	U
207-08-9	Benzo(k)fluoranthene	360.	U
50-32-8	Benzo(a)pyrene	360.	U
193-39-5	Indeno(1,2,3-cd)pyrene	360.	U
53-70-3	Dibenzo(a,h)anthracene	360.	U
191-24-2	Benzo(g,h,i)perylene	360.	U

(1) - Cannot be separated from diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JD407

Lab Name: ECOVA

Contract: 68-W8-0018

Lab Code: ECOVA

Case No.: 9504

SAS No.:

SDG No.: JD403

Matrix: (soil/water) SOIL

Lab Sample ID: _____

Sample wt/vol: 30. (g/mL) G

Lab File ID: BC238

Level: (low/med) LOW

Date Received: 5/ 9/88

% Moisture: not dec. 8. dec. 0.

Date Extracted: 5/16/88

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 5/26/88

GPC Cleanup: (Y/N) N

pH: 7.7

Dilution Factor: 1.0000

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN KETONE	6.51	300.	WJ
2. 123-42-2	4-HYDROXY-4-METHYL-2-PENTANO	7.22	20000.	WJ
3. - -	UNKNOWN KETONE	8.81	200.	WJ
4. - -	UNKNOWN	10.20	600.	WJ
5. - -	UNKNOWN CYCLIC HYDROCARBON	28.72	400.	WJ
6.				
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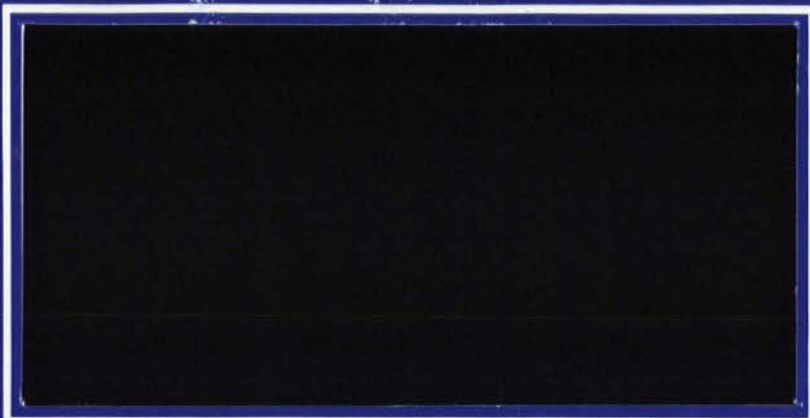
1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

Lab Name: ECOVA Corporation Contract: 68-WB-0018 JD 407
 Lab Code: ECOVA Case No.: 9504 SAS No.: N/A SDG No.: JD403
 Matrix: (soil/water) Soil Lab Sample ID: JD407
 Sample wt/vol: 30.07 (g/mL) g Lab File ID: _____
 Level: (low/med) low Date Received: 05/09/88
 % Moisture: not dec. 8 dec. _____ Date Extracted: 05/18/88
 Extraction: (SepF/Cont/Sonc) Sonc Date Analyzed: 05/25/88
 GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	<u>ug/kg</u>
319-84-6	alpha-BHC	8.6	
319-85-7	beta-BHC	8.6	
319-86-8	delta-BHC	8.6	
58-89-9	gamma-BHC (Lindane)	8.6	
76-44-8	Heptachlor	8.6	
309-00-2	Aldrin	8.6	
1024-57-3	Heptachlor epoxide	8.6	
959-98-8	Endosulfan I	8.6	
60-57-1	Dieldrin	17.0	
72-55-9	4,4'-DDE	17.0	
72-20-8	Endrin	17.0	
33213-65-9	Endosulfan II	17.0	
72-54-8	4,4'-DDD	17.0	
1031-07-8	Endosulfan sulfate	17.0	
50-29-3	4,4'-DDT	17.0	
72-43-5	Methoxychlor	86.0	
53494-70-5	Endrin ketone	17.0	
5103-71-9	alpha-Chlordane	86.0	
5103-74-2	gamma-Chlordane	86.0	
8001-35-2	Toxaphene	170.0	
12674-11-2	Aroclor-1016	86.0	
11104-28-2	Aroclor-1221	86.0	
11141-16-5	Aroclor-1232	86.0	
53469-21-9	Aroclor-1242	86.0	
12672-29-6	Aroclor-1248	86.0	
11097-69-1	Aroclor-1254	170.0	
11096-82-5	Aroclor-1260	170.0	

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**HAZARDOUS
SITE
EVALUATION
DIVISION**

Field Investigation Team Zone II



**CONTRACT NO.
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